DOCUMENT RESUME

ED 346 782 HE 025 600

AUTHOR	Hill, Susan T.
TITLE	Blacks in Undergraduate Science and Engineering Education.
INSTITUTION	National Science Foundation, Washington, D.C. Directorate for Science and Engineering Education.
REPORT NO	NSF-92-305
PUB DATE	Apr 92
NOTE	110p.
AVAILABLE FROM	Division of Science Resources Studies, National Science Foundation, Washington, DC 20550 (free).
PUB TYPE	Statistical Data (110) -- Reports - Research/Technical (143)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Bachelors Degrees; *Black Students; Degrees (Academic); Engineering Education; Graduate Study; Higher Education; High Schools; *Science Education; *Undergraduate Students; Undergraduate Study
IDENTIFIERS	CASPAR Database; *High School and Beyond (NCES); Pipelines

ABSTRACT

This report is designed to pull together the data that are available on the status of blacks in undergraduate education for use in initiating methods to improve the allocation of human resources in science and engineering in the United States. The listings and tabulations used data from the CASPAR data base and the High School and Beyond Transcript Data. Following an introduction in Chapter I, Chapter II examines the first transition point, from high school to college, noting low levels of college enrollment among blacks, high interest in science and engineering among those who do enroll, and lack of resources to complete the bachelors degree. Chapter III on the undergraduate education process, indicates that many black students interested in science and engineering drop out, and that faculty have a role in influencing decisions to complete the bachelors degree and to continue education at the graduate level. Chapter IV is on degree awards and shows trends in the proportion of black graduates in science and engineering. The final section, Chapter V, examines the undergraduate origins of black science and engineering doctoral recipients. Included are a total of 26 tables. (JB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

National Science Foundation

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Blacks in Undergraduate Science and Engineering Education

April 1992

Principal Author: Susan T. Hill

Division of Science Resources Studies
National Science Foundation

Special Report
NSF 92-305

Suggested Citation

National Science Foundation, *Blacks in Undergraduate Science and Engineering Education,* NSF 92-305, Special Report (Washington, D.C., 1992).

Availability of Publications

Single copies are available gratis from the Division of Science Resources Studies, National Science Foundation, Washington, D.C. 20550. See page 109 for availability on the Science and Technology Information System (STIS).

Telephonic Device for the Deaf

The National Science Foundation has Telephonic Device for the Deaf (TDD) capability, which enables individuals with hearing impairment to communicate with the Division of Personnel Management about NSF programs, employment, or general information. This phone number is (202) 357-7492.

Acknowledgments

This report was prepared with the assistance of many. It was prepared under the guidance of Mary Golladay, Program Director, Science and Engineering Education and Human Resources Program, Division of Science Resources Studies (SRS). The listings of institutions ranked by degree awards to blacks were tabulated from the CASPAR data base by Quantum Research Corportion. Paula Knepper, National Center for Education Statistics, kindly ran a special tabulation of High School and Beyond Transcript Data. The manuscript was processed by Sylvie Warren and Susan Hein, WESTAT, Inc., and by Simone Keith, SRS. Editing was provided by Nita Congress.

The SRS gratefully acknowledges the persons who reviewed the draft manuscript of this report: Reynolds Farley, Population Studies Center of the University of Michigan; Franklin Hamilton, Florida A&M University; William Trent, University of Illinois at Urbana-Champaign; and William McHenry, National Science Foundation, Directorate for Education and Human Resources.

Foreword

It is widely recognized that blacks are underrepresented in science and engineering, from grade school to graduate school. Very little current information is readily available on the status of blacks in undergraduate education. This report is designed to pull together the data that are available and present them to policymakers for use in initiating methods to improve the allocation of human resources in science and engineering in this country.

A workshop on "Blacks in American Science" documented the changing participation of blacks and explored ways of increasing that participation. The workshop was held from June 30 to July 1, 1990, in Winston-Salem, North Carolina; it was hosted by Dr. Willie Pearson, Jr., Wake Forest University; and Dr. Earl Smith, Washington State University. This report is derived from a presentation by Susan T. Hill on "Blacks in Undergraduate Science and Engineering Education."

Kenneth M. Brown
Director, Division of
Science Resources Studies

April 1992

Contents

Chapter:	Page
I. Introduction	1
II. High School to College Transition	11
III. The Undergraduate Process	17
IV. Degree Awards	33
V. Undergraduate Origins of S&E Doctorates	57
Appendixes:	
A. Sources of Data	67
B. Bachelor's Degrees Awarded to Blacks in Science and Engineering, by Institution: 1977-89, selected years	79

List of Tables

Table		Page
1.	Overview of black representation in undergraduate science and engineering (S&E) education	8
2.	Participation rates of 18- to 24-year old high school graduates in institutions of higher education, by selected racial/ethnic categories: 1978-88	12
3.	Percent of white and black high school graduates 18 to 24 years old enrolled in college, by sex: 1978-88	14
4.	Parental resources and financial aid of black and white full-time freshmen in 4-year institutions: 1987	18
5.	Black representation among full-time freshmen in 4-year institutions, by sex and by intended science and engineering major: 1977, 1981, and 1987	20
6.	Undergraduate enrollment of whites and blacks in institutions of higher education, by level of institution: 1978-88, alternate years	22
7.	Percent distribution of full-time regular instructional faculty, by race/ethnicity, type and control of institution, and department program area: fall 1987	24
8.	Percent distribution of 1972 and 1980 high school graduates who entered higher education immediately, by the highest level completed 4.5 years after high school, for blacks and whites	26
9.	Percent distribution of 1980 high school graduates who entered higher education immediately and indicated a science or engineering major, by the highest level completed 4.5 years after high school, for blacks and whites.	28
10.	Highest level of education attained by black and white 1980 high school seniors, by October 1980 postsecondary education attendance status: spring 1986	30

Table		Page
11.	Number of bachelor's degrees awarded to blacks and whites, by science and engineering field: 1977-89, selected years	34
12.	Number of bachelor's degrees awarded to black and white men, by science and engineering field: 1977-89, selected years	36
13.	Number of bachelor's degrees awarded to black and white women, by science and engineering field: 1977-89, selected years	38
14.	Percent distribution of bachelor's degrees awarded to blacks and whites, by science and engineering field: 1977-89, selected years	40
15.	Percent distribution of bachelor's degrees awarded to black and white men, by science and engineering field: 1977-89, selected years	42
16.	Percent distribution of earned bachelor's degrees awarded to black and white women, by science and engineering field: 1977-89, selected years	44
17.	Bachelor's degrees awarded in the natural sciences and engineering to black and white recipients, by Carnegie classification of higher education institution: 1987	46
18.	Bachelor's degrees awarded to blacks by historically black colleges and universities (HBCUs), by science and engineering field: 1989	48
19.	Bachelor's degrees awarded to blacks by nonhistorically black colleges and universities (non-HBCUs), by science and engineering field: 1977 and 1989	50
20.	Status of recent black and white science and engineering (S&E) bachelor's degree recipients after graduation	52
21.	First-time enrollment in graduate school, by broad science and engineering field: 1986-88	54
22.	Percent of 1987 and 1988 science and engineering doctorate recipients who attended a 2-year college, by race/ethnicity	58

Table Page

23. Percent distribution of all 1986-88 black and white science and engineering doctorate recipients, by Carnegie classification of baccalaureate institutions 60

24. Black U.S. citizen doctorates recipients (1986-88) with baccalaureate origins in historically black colleges and universities (HBCUs), by science and engineering field 62

Appendix

A. Institutional categories derived from the 1987 Carnegie classification system 77

B. Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years 81

I. Introduction

The National Science Foundation's (NSFs) mandate to ensure the vitality of the Nation's scientific enterprise includes the responsibility for the development of human resources in science and engineering (S&E). The competitiveness of this Nation is dependent upon colleges and universities that produce the intellectual resources and new knowledge to strengthen the ability of all talented persons to participate in science and engineering. The current underrepresentation of black Americans in S&E is reflected by the small numbers who participate in and emerge from the educational pipeline leading to careers in these fields. This report was developed to provide data on the status of black participation in collegiate S&E education. Data collected during many surveys conducted by both Federal and non-Federal sources were used in the preparation of this report (see Appendix A for detailed descriptions).

It is recognized that participation in undergraduate S&E education has its foundations, to a large extent, in precollege educational experiences--the interest, preparation, and counseling received in elementary and secondary schools. Black students express interest in S&E careers, but often their preparation for studies in these fields is lacking. Insufficient preparation at the elementary and secondary levels is reflected in a large gap in test scores of black and white students, although a recent report indicates that black students are slowly increasing their proficiency in both mathematics and science.[1] Another sign of progress is found in the scores on the mathematics portion of the Scholastic Achievement Tests (SATs). The average score among black college-bound seniors increased 26 points from 1980 to 1989, compared with a 9-point increase for whites; however, the gap between black and white average test scores remains large (105 points difference in 1989).[2]

What happens to black students who enroll in college, planning to major in an S&E field? Overview data indicate that there are large losses between the freshman year and college graduation for blacks, especially among black women (table 1). Additional information is presented herein that indicates the major leaks from the education pipeline--points where intervention strategies might be targeted.

In the next section of the report the first transition point--from high school to college--is examined. Although preparation for college is slowly improving for black students, the percent of high school graduates who enroll in college has not increased. Those black students who do

---

[1] U.S. Department of Education, National Center for Education Statistics, *Trends in Academic Progress, Achievement of American Students in Science, 1970-90, Mathematics, 1973-90, Reading, 1971-90, and Writing, 1984-90* (NCES 91-1264) (Washington, D.C.: 1991), pp. 3-4.

[2] U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1990* (Washington, D.C.: U.S. Government Printing Office, 1991), p. 123.

go on to college, however, express a higher level of interest in majoring in an S&E field than do white freshmen, but blacks have fewer resources for successful completion of a baccalaureate.

The section on the undergraduate education process indicates that many black students interested in an S&E major drop out. Longitudinal studies reveal that there is severe attrition among blacks during undergraduate education, and that half of it occurs during the first year of college. In many universities, entry level classes are viewed as "filters," but some institutions have modified them to retain qualified students.[3]

Baccalaureate completion rates of blacks are half that of whites, regardless of type of institution attended. Although the decision to complete the baccalaureate and enter graduate school is influenced by a variety of persons or events, most scientists report that a faculty member influenced their decision in some manner. [4] This is an especially important role for all faculty to play for black undergraduates, since the number of black faculty in S&E is negligible.

The section on degree awards shows that the reasons for the low proportion of black graduates in S&E are changing. Sue Berryman found in the 1983 report ***Who Will Do Science?*** that the major reason for the underrepresentation of blacks in science and engineering in the 1970s was that they chose non-quantitative fields.[5] More recent data for the 1980s indicate that field choices for bachelor's degrees were becoming more similar for blacks and whites. In light of these findings, field choice, although still a factor, is not the major factor in the underrepresentation of blacks in undergraduate science and engineering by the late 1980s. Attrition of blacks from the S&E pipeline may be the primary barrier to increased representation.

Black bachelor's degree recipients graduate from different types of institutions than do whites. Research-intensive institutions have a lower proportion of black S&E graduates than do institutions that are not research-intensive. About a third of black S&E graduates come from the Historically Black Colleges and Universities (HBCUs). These institutions play an important role in the production of black S&E baccalaureates recipients, and they serve as an important

---

[3] J.W. Carmichael, Jr. and John P. Sevenair, "Preparing Minorities for Science Careers, What's the Secret of a Small University's Big Success?" Issues in Science and Technology (Spring 1991): pp. 58-59.

[4] Willie Pearson, Jr., "The Role of Colleges and Universities in Increasing Black Representation in the Scientific Professions," in Toward Black Undergraduate Student Equality in American Higher Education. ed. Michael Nettles (Westport, Connecticut: Greenwood Press, 1988), p. 110.

[5] Sue E. Berryman, *Who Will Do Science? (New York:* Rockefeller Foundation, 1983), p. 5.

source of black students who go on to graduate work and a doctorate.

In the final section of this report the undergraduate origins of black S&E doctorate recipients are examined. Almost 3 out of 10 recent black doctorate recipients in S&E fields earned their baccalaureate at an HBCU. Again, black doctorate recipients were less likely than their white counterparts to have their undergraduate origins in research-intensive universities.

Reflected in this report are indications of changes already taking place; in some cases S&E participation rates of blacks have risen, whereas in others, historically low participation rates have exhibited further declines. Overall, the data in this report indicate some points where intervention strategies might be useful--where institutions and national programs could facilitate the retention of black undergraduate students in science and engineering.

NSF has launched several initiatives to address the issue of low retention of students (minorities as well as other students) in undergraduate S&E education; a key aspect of the Foundation's approach to educational improvements is the development of coalitions.[6] For example, NSF instituted a new program designed to create partnerships--between education and industry and between colleges and high schools--needed to address special issues involved in retaining minority students in S&E fields. The **Alliances for Minority Participation (AMP)** program promotes retention of minority students throughout the undergraduate years as well as during the transitions from high school to college and graduate studies.[7]

In addition, **the NSF Research Careers for Minority Scholars program** places highest priority on projects that enhance minority students' chances of remaining in the S&E pipeline. It is designed to assist colleges and universities in providing comprehensive research and academic enrichment programs for minority undergraduate and graduate S&E students.[8] Another program, **Research Experiences for Undergraduates,** is an attempt to increase for all undergraduates hands-on research in academic and industrial laboratories. Blacks constituted 4-6 percent of the undergraduates who participated in this program in its first three years (1987-89); they were more likely than their nonblack peers to indicate that their participation would

---

[6] Walter E. Massey, "Science, Technology, and Human Resources: Preparing for the 21st Century," The Status of Black Americans: 1992, ed. National Urban League, (Washington, D.C.: 1992), pp. 164-168.

[7] National Science Foundation, *Human Resource Development for Minorities in Science and Engineering,* Program Announcement and Guidelines, (NSF 91-129) Washington, D.C.: 1991), pp. 28-31.

[8] Ibid., pp. 23-25.

help clarify educational and career plans.[9]

In the area of undergraduate education, the goal of NSF is to increase the number of minorities earning bachelor's degrees in science and engineering fields by the year 2000. A special report on Minorities in Science states that "to meet these goals, the alliances are going to have to dramatically plug some important leaks in the pipeline that produces science and engineering professionals."[10] This report provides useful information to those joined in this effort.

---

[9] National Science Foundation, *NSF's Research Experiences for Undergraduates (REU) Program: An Assessment of the First Three Years* (NSF 90-58). (Washington, D.C.: 1990), pp. 13-14.

[10] Rebecca L. Rawls, "Minorities in Science, Growing Efforts to Increase Participation of Historically Underrepresented Groups," *Chemical and Engineering News* (April 15, 1991), pp. 20-35.

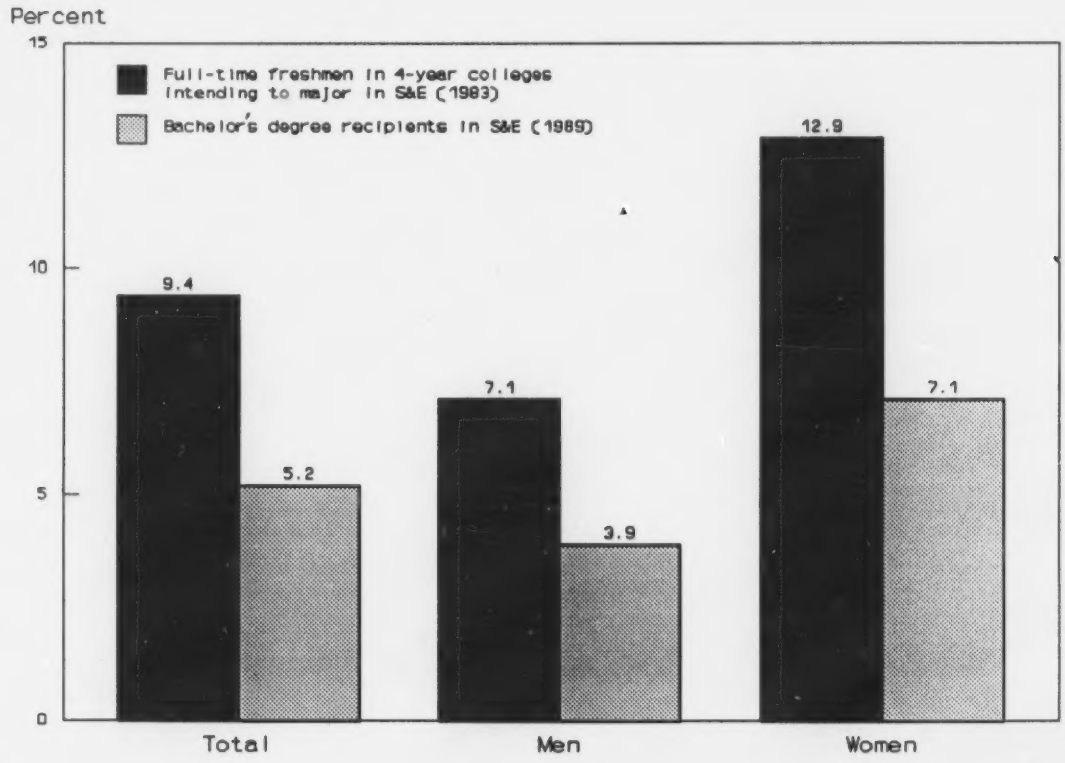
Table 1. Overview of black representation in undergraduate science and engineering (S&E) education

Time period	Source	Blacks as a percent of--	Total	Men	Women
July 1983	(1)	18- to 19-year-old population.....	14.4%	14.2%	14.7%
Oct. 1983	(1)	High school graduates 18 to 19 years old.....	12.0	10.2	12.9
Fall 1983	(2)	All full-time freshmen.....	9.0	7.8	10.1
Fall 1983	(2)	Full-time freshmen in 4-year colleges intending to major in S&E.....	9.4	7.1	12.9
Fall 1984	(3)	Undergraduate enrollment	9.4	--	--
Fall 1986	(3)	Undergraduate enrollment	9.2	--	--
1988/89	(3)	Bachelor degree recipients.....	5.5	4.5	6.4
1988/89	(3)	Bachelor degree recipients in S&E.....	5.2	3.9	7.1
Fall 1989	(4)	First-time S&E graduate enrollment.....	4.2	--	--

KEY: -- = Not available.

SOURCES: National Science Foundation/SRS' data compiled from (1)U.S. Bureau of the Census, Current Population Surveys; (2) Cooperative Institutional Research Program, University of of California-Los Angeles, American Freshman National Norms; (3) U.S. Department of Education/National Center for Education Statistics, Enrollment and Earned Degree Surveys; and (4) Council of Graduate Schools, Survey of Graduate Enrollment

Chart 1.
Black representation at the beginning and the end of science and engineering (S&E) education, by sex



SOURCES: University of California-Los Angeles/Cooperative Institutional Research Program, American Freshman National Norms; and U.S. Department of Education/National Center for Education Statistics, Completions Survey

The representation of blacks among freshmen at 4-year colleges interested in majoring in an S&E field is high, but black representation among actual bachelor's degree recipients in S&E fields is low. The representation of blacks among S&E baccalaureate recipients was just over half of their representation among freshmen who planned to major in an S&E field.

II. High School to College Transition

Table 2. Participation rates of 18-to-24-year old high school graduates in institutions of higher education, by selected racial/ethnic categories: 1978-88

October of --	Total population 1/			White, non-Hispanic			Black, non-Hispanic			Ratio of black participation rate to white participation rate (100% = parity)
	High school graduates	Enrolled in college	Participation rate	High school graduates	Enrolled in college	Participation rate	High school graduates	Enrolled in college	Participation rate	
1970 census base				(Numbers in thousands)						
1978.....	22,309	6,995	31.4%	18,639	5,836	31.3%	2,292	681	29.7%	95%
1979.....	22,421	6,991	31.2	18,697	5,843	31.2	2,307	681	29.5	95
1980.....	22,745	7,226	31.8	18,787	6,035	32.1	2,425	672	27.7	84
1980 census base										
1981.....	23,343	7,575	32.5	19,029	6,222	32.7	2,628	735	28.0	86
1982.....	23,291	7,678	33.0	18,842	6,272	33.3	2,693	752	27.9	84
1983.....	22,988	7,477	32.5	18,582	6,129	33.0	2,691	726	27.0	82
1984.....	22,870	7,591	33.2	18,214	6,180	33.9	2,832	770	27.2	80
1985.....	22,349	7,537	33.7	17,581	6,142	34.9	2,749	718	26.1	75
1986.....	21,766	7,397	34.0	16,839	5,814	34.5	2,735	782	28.6	83
1987.....	21,118	7,693	36.4	16,162	6,048	37.4	2,669	803	30.1	80
1988.....	20,900	7,791	37.3	16,097	6,229	38.7	2,616	732	28.0	72

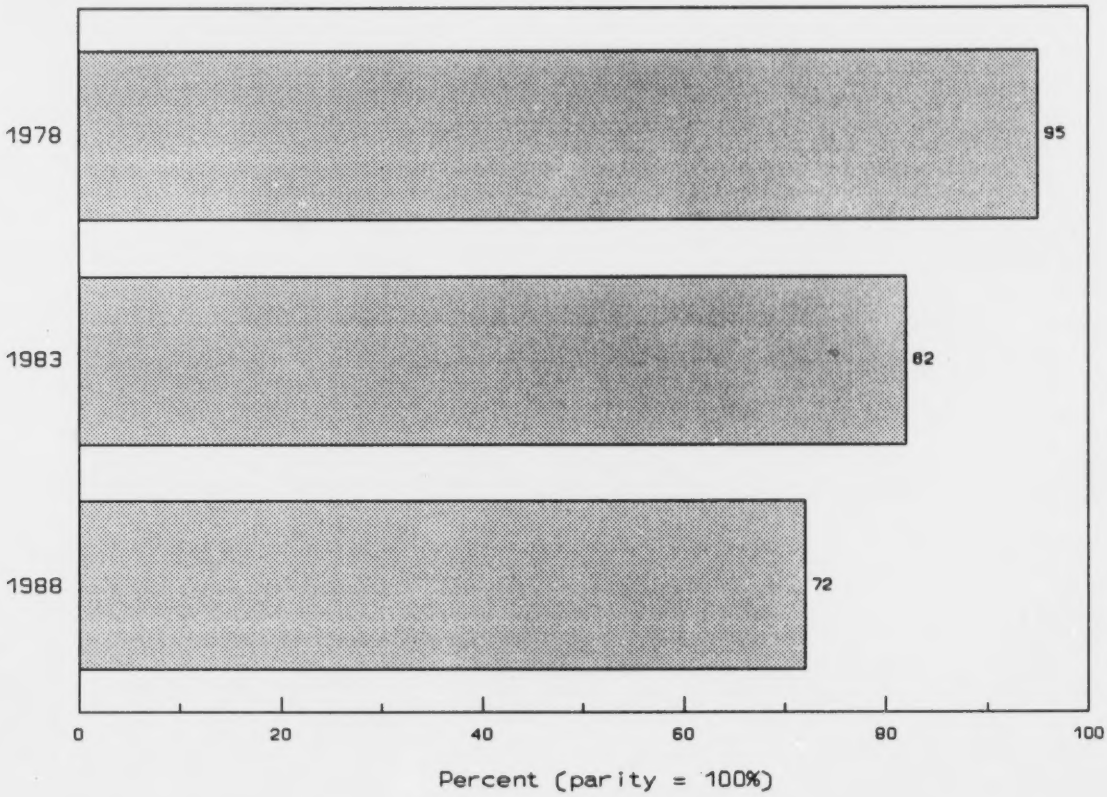
1/ Totals reflected here represent all racial/ethnic categories.

NOTE: This table represents data collected in sample surveys of households rather than in surveys of institutions of higher education. The Current Population Survey samples are derived from the decennial censuses of populations. Also, the data for whites and blacks differ from Bureau of the Census reports because Hispanic data have been removed from these groups to allow comparisons with other data sources.

SOURCE: U.S. Bureau of the Census, Current Population Reports, Series P-20, various years

Chart 2.

Ratio of black to white college enrollment rates of high school graduates 18 to 24 years old: 1978, 1983, and 1988



SOURCE: U.S. Bureau of the Census, Current Population Survey

In 1978, the proportion of black high school graduates 18 to 24 years old who enrolled in college was similar to that of their white counterparts. In the next decade, the rates for whites increased while those for blacks did not. By 1988, the college enrollment rate of blacks was about three-fourths the rate for whites.

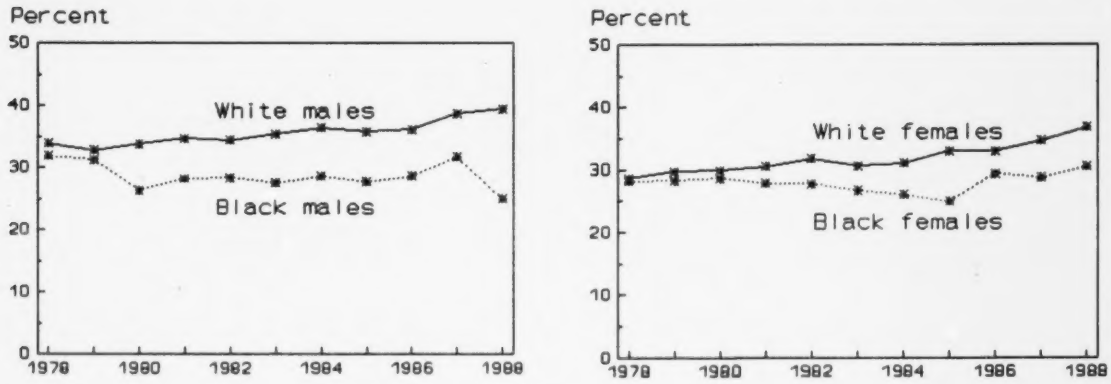
Table 3. Percent of white and black high school graduates 18 to 24 years old enrolled in college, by sex: 1978-88

October of --	High school graduates 18 to 24 years old			
	White		Black	
	Males	Females	Males	Females
1978.....	33.9%	28.6%	31.9%	28.2%
1979.....	32.8	29.7	31.2	28.3
1980.....	33.8	29.9	26.3	28.6
1981.....	34.7	30.5	28.2	27.8
1982.....	34.4	31.8	28.3	27.7
1983.....	35.4	30.6	27.5	26.7
1984.....	36.4	31.1	28.6	26.0
1985.....	35.8	33.0	27.7	24.9
1986.....	36.1	33.0	28.6	29.4
1987.....	38.7	34.7	31.7	28.7
1988.....	39.4	36.9	25.0	30.5

SOURCE: U.S. Bureau of the Census, Current Population Reports, Series P-20, School Enrollments, Social and Economic Characteristics of Students

Chart 3.

Percent of white and black high school graduates 18 to 24 years old enrolled in college, by sex: 1978-88



SOURCE: U.S. Bureau of the Census, Current Population Survey

The college enrollment rates for both black male and black female high school graduates were similar in 1978. The difference between the college enrollment rates for black males and white males grew especially large by 1988.

III. The Undergraduate Process

Table 4. Parental resources and financial aid of black and white full-time freshmen in 4-year institutions: 1987

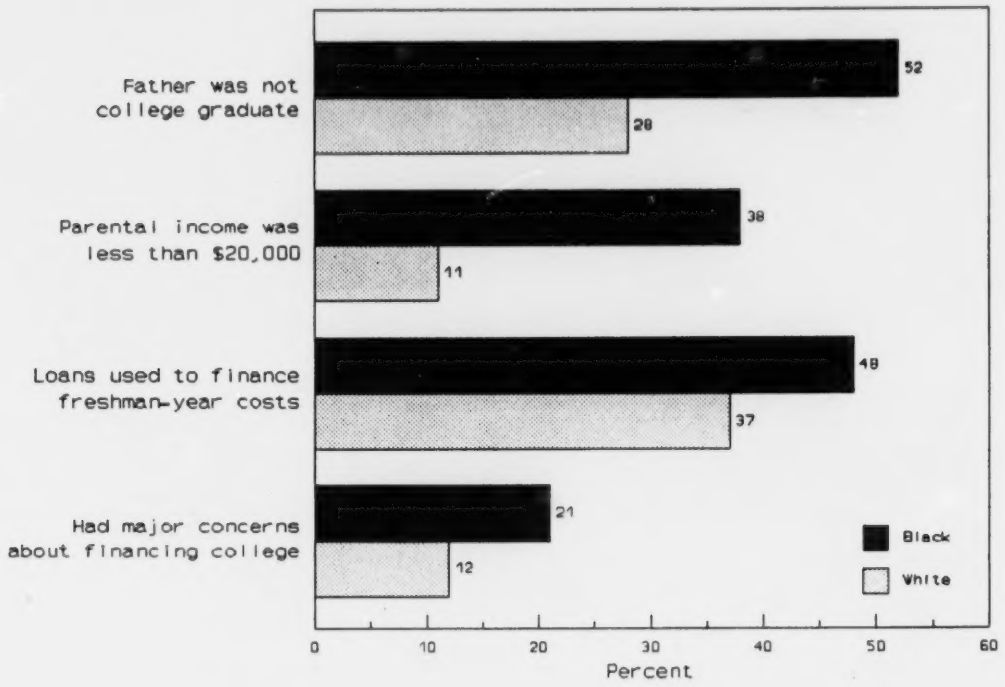
Characteristics	Black	White
Parental education		
Father	100%	100%
Less than high school	20	7
High school graduate	32	21
College graduate	14	25
Graduate degree	11	24
Other	23	24
Mother	100	100
Less than high school	14	5
High school graduate	30	31
College graduate	16	23
Graduate degree	11	11
Other	30	30
Estimated parental income	100	100
Less than $10,000	18	3
$10,000-19,999	19	8
$20,000-29,999	18	13
$30,000-39,999	16	19
$40,000-49,999	9	13
$50,000 or more	20	44
Financial aid		
Sources of financing for college	--	--
Parents/relatives	74	85
Savings	56	94
Part-time work	43	41
Full-time work	3	1
Loan	48	37
Concern about college financing	100	100
None	27	40
Some	52	48
Major	22	12

NOTE: Because of rounding, detail may not add to totals.

KEY: -- = Because freshmen may have had more than one source of financing, these percents do not add to 100 percent.

SOURCE: University of California-Los Angeles/Cooperative Institutional Research Program, American Freshman National Norms, unpublished tabulations

Chart 4.
Resource differences of black and white full-time freshmen in 4-year institutions: 1987



SOURCE: University of California-Los Angeles/Cooperative Institutional Research Program, American Freshman National Norms

Once on campus, black freshmen in 4-year colleges have fewer parental resources than majority students. Over half of black freshmen are first-generation college students, and almost 40 percent have parents who earned less than $20,000 annually. Almost half took out loans to pay for the cost of their first year of education, and one-fifth had major concerns about how they would pay for their college education.

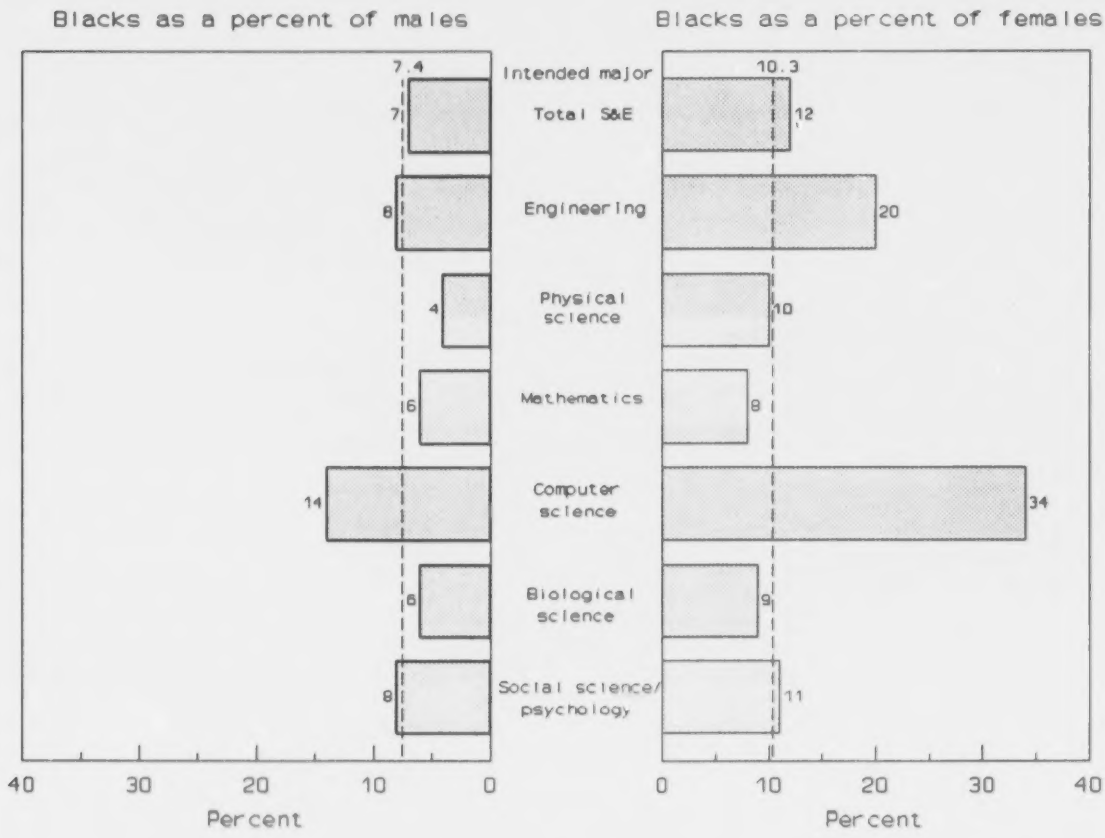
Table 5. Black representation among full-time freshmen in 4-year institutions, by sex and by intended science and engineering major: 1977, 1981, and 1987

Intended major	Blacks as a percent of--								
	Total			Men			Women		
	1977	1981	1987	1977	1981	1987	1977	1981	1987
All freshmen	8.9%	8.5%	8.9%	7.6%	7.5%	7.4%	10.2%	9.4%	10.3%
Total science and engineering	8.6	8.6	9.5	7.0	7.0	7.5	11.2	11.1	12.3
Engineering	7.3	7.6	9.8	6.7	6.7	7.7	12.1	12.5	20.4
Sciences									
Physical	5.0	5.6	5.7	4.0	4.1	3.9	7.6	9.2	9.6
Mathematics	5.3	7.3	6.6	4.8	6.7	5.5	6.5	7.8	7.6
Computer	10.0	13.2	20.0	7.8	10.3	13.6	13.0	17.0	34.0
Biological	6.2	7.1	7.6	5.7	5.7	5.9	6.8	8.4	9.2
Social/psychology	12.9	9.9	9.5	10.9	8.5	7.5	14.0	10.6	10.6
Premed	8.1	9.1	10.2	5.3	5.8	6.7	12.2	12.4	13.4
Undecided	4.8	6.0	4.6	4.4	7.3	3.8	5.0	5.2	5.0

SOURCE: University of California-Los Angeles/Cooperative Institutional Research Program, American Freshman National Norms, unpublished tabulations

Chart 5.

Black representation among full-time freshmen in 4-year institutions, by sex and intended science and engineering (S&E) major: 1987



NOTE: The broken black vertical lines indicate black representation among all Full-time freshmen in 4-year institutions.

SOURCE: University of California-Los Angeles/Cooperative Institutional Research Program, American Freshman National Norms

The representation of blacks among male freshmen intending to major in an S&E field was similar to their representation on 4-year college campuses. Blacks had a higher representation among female freshmen intending to major in an S&E field, due primarily to their proportions in two fields: blacks consisted of one-fifth of the women intending to major in engineering and one-third of the women whose intended major was computer science.

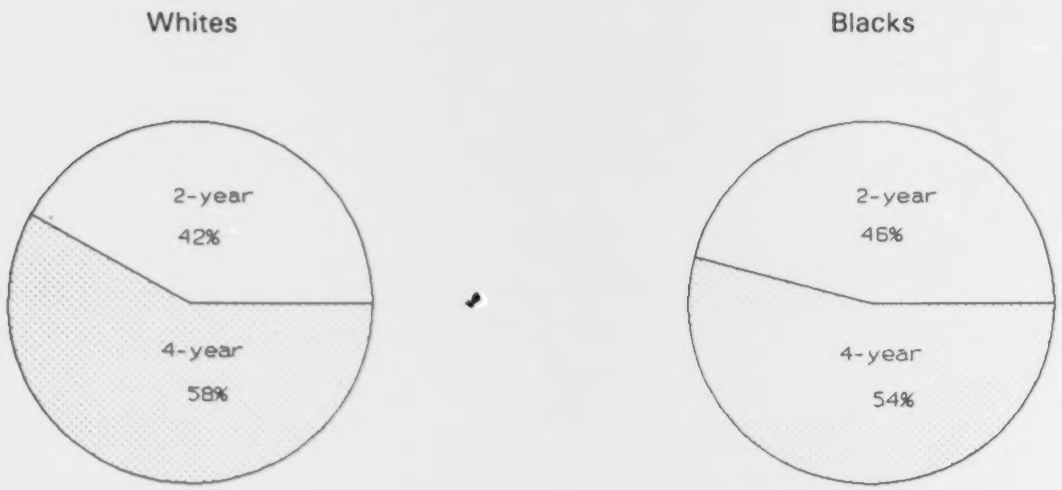
Table 6. Undergraduate enrollment of whites and blacks in institutions of higher education, by level of institution: 1978-88, alternate years

Undergraduate enrollment	Fall of--					
	1978	1980	1982	1984	1986	1988
In all institutions	(Numbers in thousands)					
Total	9,757	10,560	10,875	10,610	10,798	11,304
Black	975	1,028	1,028	995	995	1,039
Percent	10.0	9.7	9.5	9.4	9.2	9.2
In 4-year institutions						
Total	5,729	6,039	6,135	6,083	6,118	6,436
Black	532	556	539	536	528	566
Percent	9.3	9.2	8.8	8.8	8.6	8.8
In 2-year institutions						
Total	4,028	4,521	4,740	4,527	4,680	4,868
Black	443	472	489	459	467	473
Percent	11.0	10.4	10.3	10.1	10.0	9.7
Percent of black undergraduate enrollment in 2-year colleges	45.4	45.9	47.6	46.1	46.9	45.5
Percent of white undergraduate enrollment in 2-year colleges	39.9	41.6	42.9	41.4	41.9	41.5

SOURCE: Department of Education/National Center for Education Statistics, Fall Enrollment Surveys, unpublished tabulations

Chart 6.

Undergraduate enrollment of white and black students in 2-year and 4-year institutions: 1988



SOURCE: U.S. Department of Education/National Center for Education Statistics, Fall Enrollment Surveys

Of the more than 1 million black undergraduates enrolled in higher education in 1988, 46 percent were enrolled in 2-year colleges and 54 percent in 4-year colleges. White undergraduates were slightly more likely to attend a 4-year institution than were blacks.

Table 7. Percent distribution of full-time regular instructional faculty, by race/ethnicity, type and control of institution, and department program area: fall 1987

Type and control of institution and department program area	Full-time regular faculty		Race/ethnicity of full-time regular faculty				
	Number	Percent	White	Hispanic	Black	Asian	American Indian
			(Percent distribution)				
All institutions 1/.....	489,164	100%	89%	2%	3%	4%	1%
By type and control							
Public research.....	96,228	100	90	2	2	5	1
Private research.....	39,136	100	85	5	6	4	*
Public doctoral 2/.....	53,871	100	91	1	2	5	1
Private doctoral 3/.....	22,107	100	86	1	2	10	1
Public comprehensive....	93,144	100	88	2	4	6	1
Private comprehensive...	35,160	100	91	1	2	4	1
Liberal arts.....	39,086	100	87	1	8	3	1
Public 2-year 4/.....	91,559	100	91	3	3	2	1
Other 5/.....	14,778	100	95	1	3	1	*
4-year Institutions.....	378,732	100	89	2	3	5	1
Science and engineering							
Engineering.....	18,682	100	83	1	1	15	*
Natural sciences.....	60,347	100	89	2	1	7	1
Social sciences 6/.....	40,369	100	89	2	5	2	1
Nonscience and engineering							
Health.....	78,927	100	88	1	3	7	1
Agriculture and home economics.....	10,912	100	94	3	1	1	2
Education.....	24,464	100	88	3	7	1	1
Humanities.....	47,426	100	91	4	3	2	1
Business.....	24,329	100	86	1	3	9	1
Fine arts.....	24,789	100	91	3	3	2	1
Other fields.....	48,488	100	88	1	6	4	1

*Less than .05 percent.

1/ All accredited, nonproprietary U.S. postsecondary institutions that grant a 2-year (AA) or higher degree and whose accreditation at the higher education level is recognized by the U.S. Department of Education.

2/ Includes specialized medical schools.

3/ Includes specialized medical schools.

4/ Respondents from private 2-year colleges are included only in "all institutions" because of too few cases for a reliable estimate.

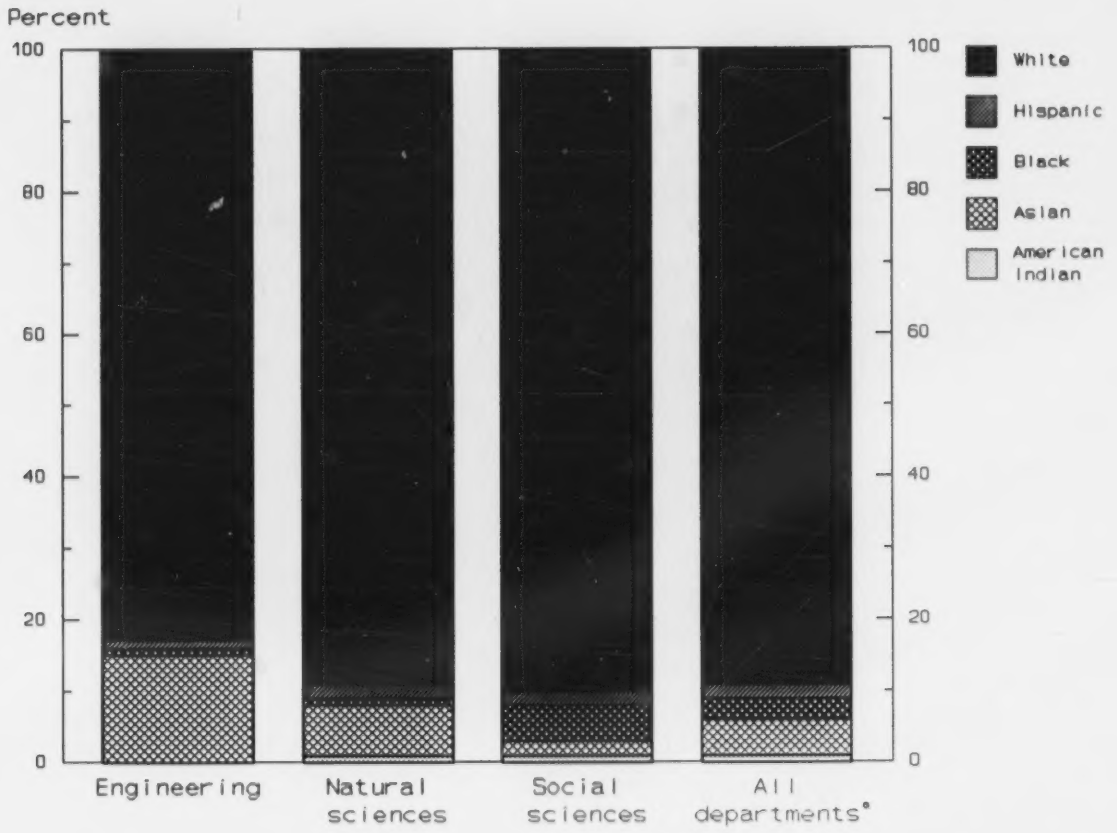
5/ Religious and other specialized institutions, except medical, that offer degrees ranging from the bachelor's to the doctorate.

6/ Includes psychology.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education/National Center for Education Statistics, 1988 National Survey of Postsecondary Faculty

Chart 7.
Full-time faculty in 4-year institutions, by race/ethnicity and department: fall 1987



*Includes nonscience and engineering departments.

SOURCE: U.S. Department of Education/National Center for Education Statistics, National Survey of Postsecondary Faculty

Blacks constituted only 1 percent of the full-time faculty in engineering and in the natural sciences and 5 percent of the faculty in the social sciences in 1987.

Table 8. Percent distribution of 1972 and 1980 high school graduates who entered higher education immediately, by the highest level completed 4.5 years after high school, for blacks and whites

Race/ethnicity	1972 high school graduates who completed--					Percent still enrolled after 1/77*	1980 high school graduates who completed--				
	Less than 1 year	1 full year	2 full years	3 full years	Bachelor's degree		Less than 1 year	1 full year	2 full years	3 full years	Bachelor's degree
Total.....	18.4%	14.9%	15.1%	20.4%	31.2%	23.6%	19.8%	14.1%	19.8%	24.6%	21.8%
White.....	17.5	14.3	14.9	20.5	32.8	23.7	18.3	12.8	19.8	25.0	24.1
Black.....	24.5	17.0	15.7	20.9	21.9	21.8	29.3	19.1	20.0	20.9	10.6
Other.....	23.9	21.1	16.1	18.5	20.3	24.6	23.2	20.2	20.2	24.7	11.7

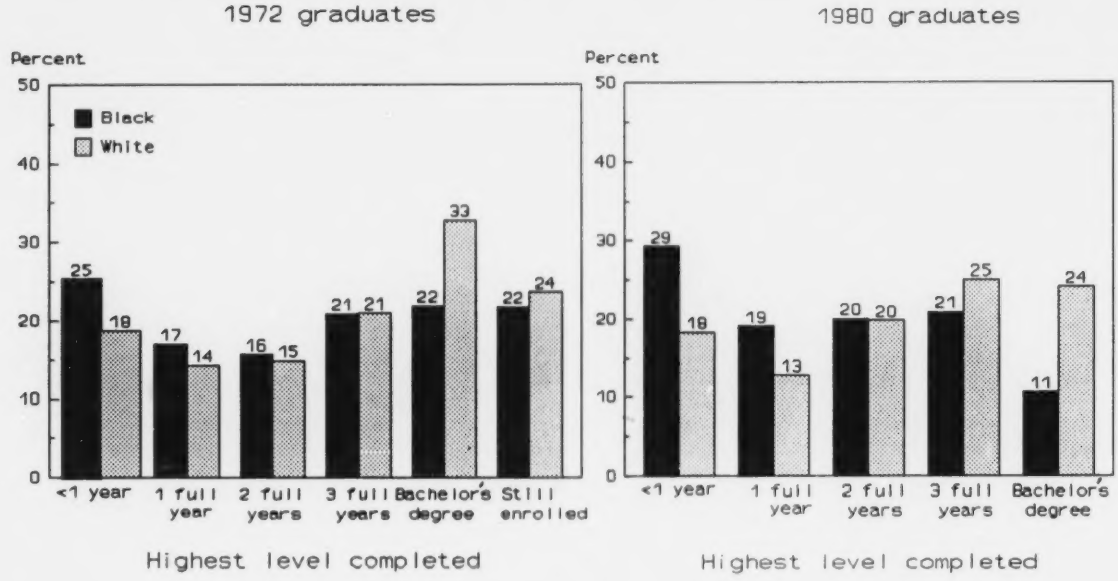
*Some further enrollment after January 1977 was shown by the transcripts for the 1972 cohort. It is not possible to determine this reliably for the 1980 cohort.

NOTE: Data relate only to students entering higher education in the year of high school graduation.

SOURCE: U.S. Department of Education/National Center for Education Statistics, National Longitudinal Survey of the High School Class of 1972 and High School and Beyond Survey (1980 Seniors) Postsecondary Education Transcript Study

Chart 8.

Percent of 1972 and 1980 high school graduates who entered higher education immediately, by highest level completed within 4.5 years after high school graduation, for blacks and whites



SOURCE: U.S. Department of Education/National Center for Education Statistics, Longitudinal Surveys of 1972 and 1980 High School Seniors

A longitudinal study indicates that almost half of the black 1980 high school graduates who entered college completed only 1 year of study or less; the rate for whites was nearly one-third.

Table 9. Percent distribution of 1980 high school graduates who entered higher education immediately and indicated a science or engineering major, by the highest level completed 4.5 years after high school, for blacks and whites

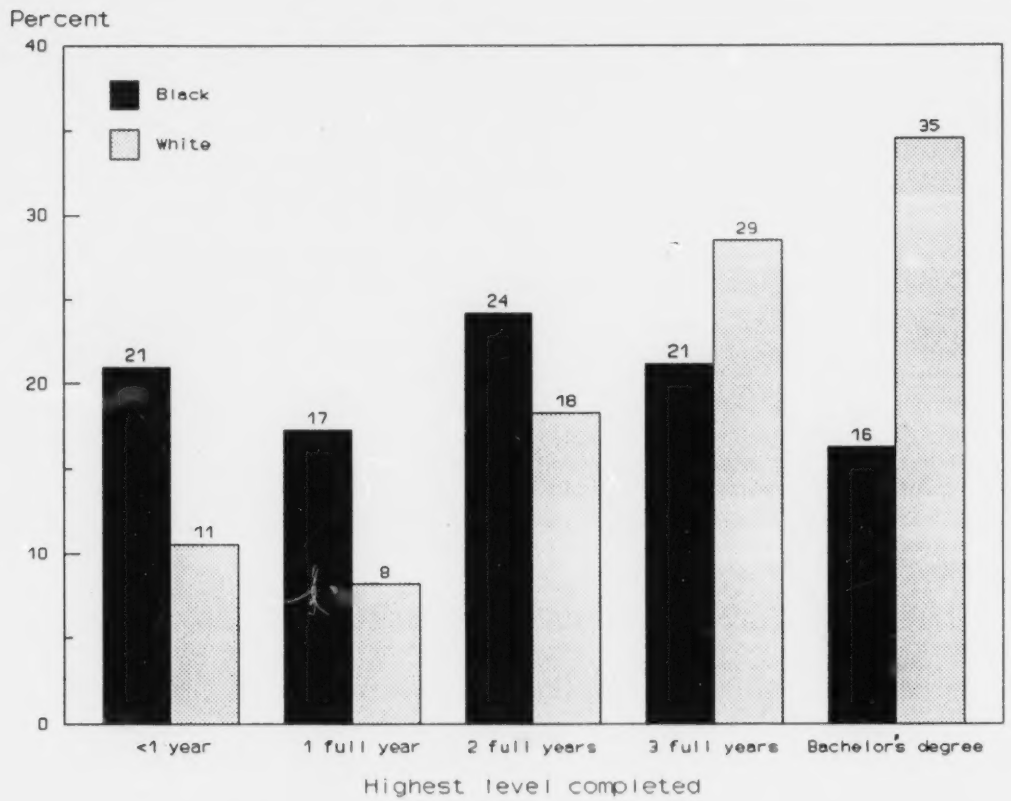
Race/ethnicity	1980 high school graduates who completed--					
	Total	Less than 1 year	1 full year	2 full years	3 full years	Bachelor's degree
Total	100%	11.6%	9.7%	18.9%	28.1%	31.7%
White	100	10.6	8.2	18.3	28.5	34.5
Black	100	21.0	17.3	24.2	21.2	16.3
Other	100	11.6	16.9	18.4	32.2	21.0

NOTE: Data relate only to students entering higher education in the year of high school graduation.

SOURCE: U.S. Department of Education/National Center for Education Statistics, High School and Beyond Survey (1980 Seniors) Postsecondary Education Transcript Study, unpublished tabulations.

Chart 9.

Percent of 1980 high school graduates who entered higher education immediately and indicated a science or engineering major, by highest level completed within 4.5 years after high school graduation, for blacks and whites



SOURCE: U.S. Department of Education/National Center for Education Statistics, High School and Beyond Survey

Among those students who entered college in fall 1980 immediately after high school and intended to major in a science or engineering field, 16 percent of blacks and 34 percent of whites had completed their bachelor's degrees 4.5 years later. The percent that completed less than 1 year of study was twice as high for blacks as for whites.

Table 10. Highest level of education attained by black and white 1980 high school seniors, by October 1980 postsecondary education attendance status: spring 1986

October 1980 post-secondary education attendance status	Highest educational attainment					
	Total	High school diploma	License/ certificate	Associate degree	Bachelor's degree	Graduate/ professional degree
	(Percent distribution)					
Blacks enrolled full time in--						
2-year public college..	100%	52.8%	19.2%	18.9%	9.1%	*
4-year public college..	100	59.4	11.2	3.4	25.6	0.5
4-year private college.	100	50.5	15.0	5.5	28.5	0.6
Whites enrolled full time in--						
2-year public college..	100	48.6	10.8	20.7	19.3	0.7
4-year public college..	100	39.0	6.8	4.8	48.0	1.5
4-year private college.	100	28.1	7.9	5.1	55.7	3.3

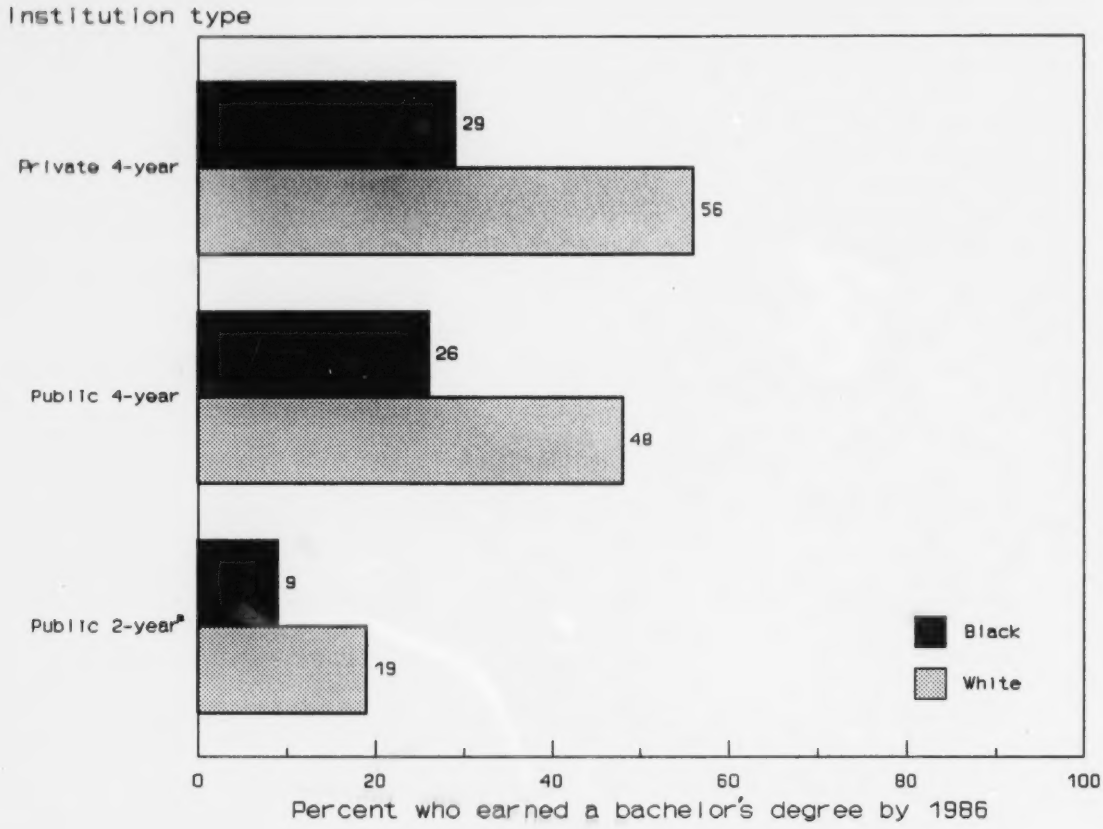
*Less than 0.05 percent.

NOTES: Because of rounding, details may not add to totals. There were too few cases from which to derive reliable estimates of 2-year private colleges.

SOURCE: Department of Education/National Center for Education Statistics, High School and Beyond Survey (1980 Seniors)

Chart 10.

Percent of 1980 black and white high school seniors who earned bachelor's degrees by 1986, by type of institution attended in 1980



*Of students enrolled full time in 1980 in public 2-year institutions, 38 percent of blacks and 32 percent of whites earned associate degrees or licenses/certificates and did not go on to earn baccalaureates by 1986.

NOTE: Includes only those 1980 high school seniors who enrolled full time in Higher education by October 1980.

SOURCE: U.S. Department of Education/National Center for Education Statistics, High School and Beyond Survey

Six years after entering college, the percent of blacks who earned bachelor's degrees was about half that of whites, regardless of the type of institution first attended. Among those blacks who started college at a public 2-year college, about 1 out of 10 went on to earn a bachelor's degree.

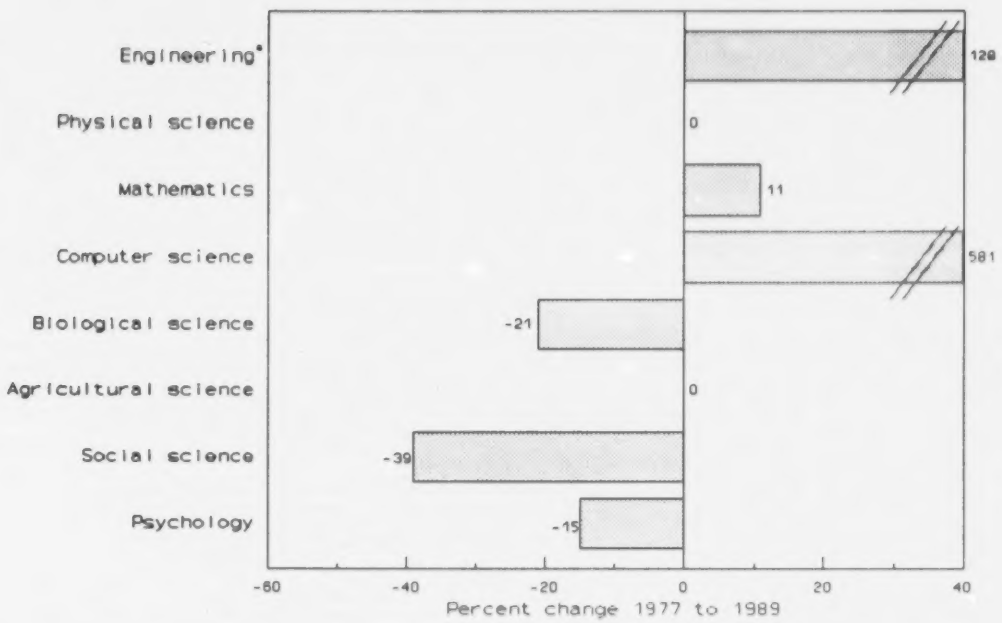
IV. Degree Awards

Table 11. Number of bachelor's degrees awarded to blacks and whites, by science and engineering field: 1977-89, selected years

Field	1977	1979	1981	1985	1987	1989	Percent change 1977 to 1989
	Black, non-Hispanic						
Total, all fields	58,700	60,301	60,729	57,563	55,103	56,837	-3.2%
Total science and engineering	19,455	18,743	18,828	18,075	18,279	18,405	-5.4
Engineering and engineering technology	1,385	1,775	2,449	3,142	3,420	3,154	127.7
Sciences	18,070	16,968	16,379	14,933	14,859	15,251	-15.6
Natural sciences	4,489	4,700	4,932	6,160	6,662	6,171	37.5
Physical science	692	704	911	830	823	697	0.7
Mathematics	712	652	585	770	834	792	11.2
Computer science	361	507	786	2,143	2,820	2,457	580.6
Biological science	2,415	2,491	2,270	2,047	1,890	1,916	-20.7
Agricultural science	309	346	380	370	295	309	0.0
Social sciences/psychology	13,581	12,268	11,447	8,773	8,197	9,080	-33.1
Social science	10,360	9,050	8,139	6,106	5,746	6,337	-38.8
Psychology	3,221	3,218	3,308	2,667	2,451	2,743	-14.8
Health fields	3,136	3,380	3,603	3,082	3,066	3,159	0.7
Nonscience and engineering	36,109	38,178	38,298	36,406	33,758	35,273	-2.3
	White, non-Hispanic						
Total, all fields	807,857	802,665	807,509	826,356	819,477	840,326	4.0%
Total science and engineering	290,175	284,852	281,924	299,662	289,700	283,260	-2.4
Engineering and engineering technology	42,072	52,651	60,856	76,305	71,866	65,225	55.0
Sciences	248,103	232,201	221,068	223,357	217,834	218,035	-12.1
Natural sciences	106,418	103,036	100,791	112,273	103,133	88,830	-16.5
Physical science	20,417	20,958	21,249	20,541	16,653	14,238	-30.3
Mathematics	12,602	10,229	9,447	12,163	13,265	12,287	-2.5
Computer science	5,508	7,404	12,566	31,321	29,181	21,711	294.2
Biological science	47,695	42,745	37,292	31,818	30,549	28,404	-40.4
Agricultural science	20,196	21,700	20,237	16,430	13,485	12,190	-39.6
Social sciences/psychology	141,685	129,165	120,277	111,084	114,701	129,205	-8.8
Social science	100,191	92,517	85,559	77,125	78,940	88,699	-11.5
Psychology	41,494	36,648	34,718	33,959	35,761	40,506	-2.4
Health fields	51,551	55,751	56,791	43,152	42,824	39,103	-24.1
Nonscience and engineering	466,131	462,062	468,794	483,542	486,953	517,963	11.1

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Survey files

Chart 11.
Percent change in bachelor's degrees awarded to blacks, by science and engineering field: 1977 to 1989



*Includes engineering technology.

NOTE: Large percent changes may reflect small numerical changes; see table for actual numbers.

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Surveys

Although the total number of bachelor's degrees earned by blacks declined from 1977 to 1989, large percentage increases occurred in baccalaureates awarded in engineering and computer science. Degrees earned by blacks in social science and psychology declined in this period.

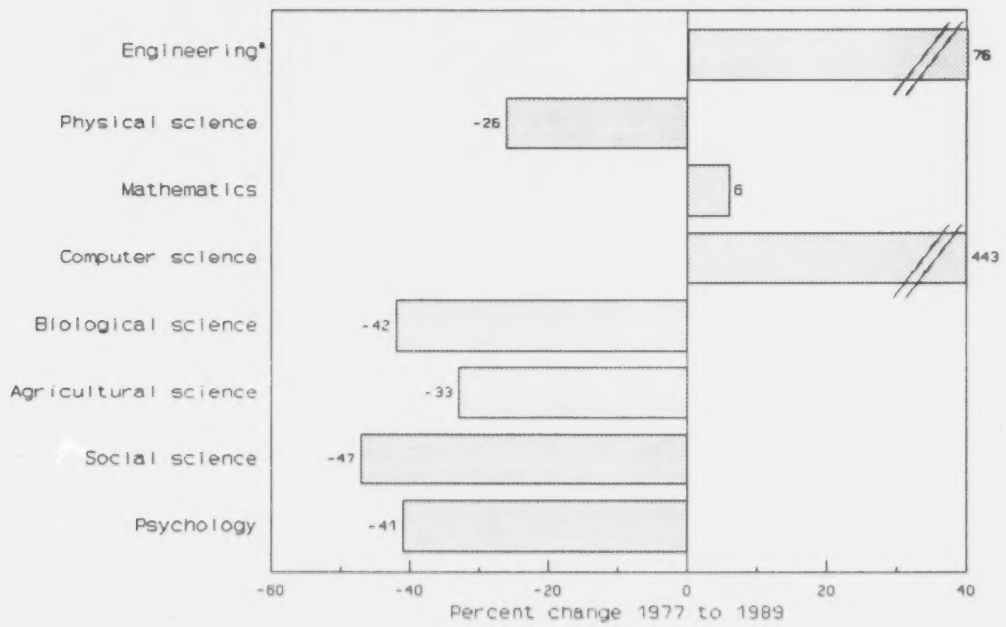
Table 12. Number of bachelor's degrees awarded to black and white men, by science and engineering field: 1977-89, selected years

Field	1977	1979	1981	1985	1987	1989	Percent change 1977 to 1989
	Black, non-Hispanic						
Total, all fields	25,165	24,675	24,523	23,040	21,942	21,913	-12.9%
Total science and engineering	10,641	9,740	9,695	9,204	9,132	8,557	-19.6
Engineering and engineering technology	1,295	1,550	2,020	2,420	2,513	2,281	76.1
Sciences	9,346	8,190	7,675	6,784	6,619	6,276	-32.8
Natural sciences	2,953	2,861	2,937	3,252	3,359	2,817	-4.6
Physical science	494	436	618	457	433	365	-26.1
Mathematics	353	320	276	376	399	374	5.9
Computer science	222	265	394	1,036	1,284	1,205	442.8
Biological science	1,197	1,149	954	806	723	700	-41.5
Agricultural science	258	251	259	256	180	173	-32.9
Social sciences/psychology	6,393	5,329	4,738	3,532	3,260	3,459	-45.9
Social science	5,296	4,275	3,698	2,781	2,599	2,814	-46.9
Psychology	1,097	1,054	1,040	751	661	645	-41.2
Health fields	429	440	436	321	340	309	-28.0
Nonscience and engineering	14,524	14,935	14,828	13,836	12,810	13,047	-10.2
	White, non-Hispanic						
Total, all fields	438,220	418,271	406,266	405,196	396,537	398,552	-9.1%
Total science and engineering	205,148	196,586	189,653	196,708	188,399	174,643	-14.9
Engineering and engineering technology	40,181	48,218	54,460	66,353	62,308	56,780	41.3
Sciences	164,967	148,368	135,193	130,355	126,091	117,863	-28.6
Natural sciences	85,062	79,425	74,450	75,695	69,811	55,398	-34.9
Physical science	16,410	16,356	16,126	14,980	12,139	10,173	-38.0
Mathematics	7,384	6,024	5,423	6,509	7,050	6,598	-10.6
Computer science	4,233	5,422	8,623	20,188	19,793	15,799	273.2
Biological science	30,728	25,874	21,092	16,809	15,985	14,377	-53.2
Agricultural science	15,653	15,755	13,910	11,252	9,289	8,471	-45.9
Social sciences/psychology	79,905	68,943	60,743	54,660	56,280	62,465	-21.8
Social science	61,634	54,592	48,522	43,791	45,111	50,552	-18.0
Psychology	18,271	14,351	12,221	10,869	11,169	11,913	-34.8
Health fields	10,654	9,994	9,276	5,957	5,555	218,687	1952.6
Nonscience and engineering	233,072	221,685	216,613	208,488	208,138	5,222	-97.8

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Survey files

Chart 12.

Percent change in bachelor's degrees awarded to black men, by science and engineering (S&E) field: 1977 to 1989



*Includes engineering technology.

NOTE: Large percent changes may reflect small numerical changes; see table for actual numbers

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Surveys

Overall, the number of bachelor's degrees awarded to black men declined from 1977 to 1989; specifically, declines occurred in five of the eight S&E fields. Significant increases occurred only in the fields of computer science and engineering among black men.

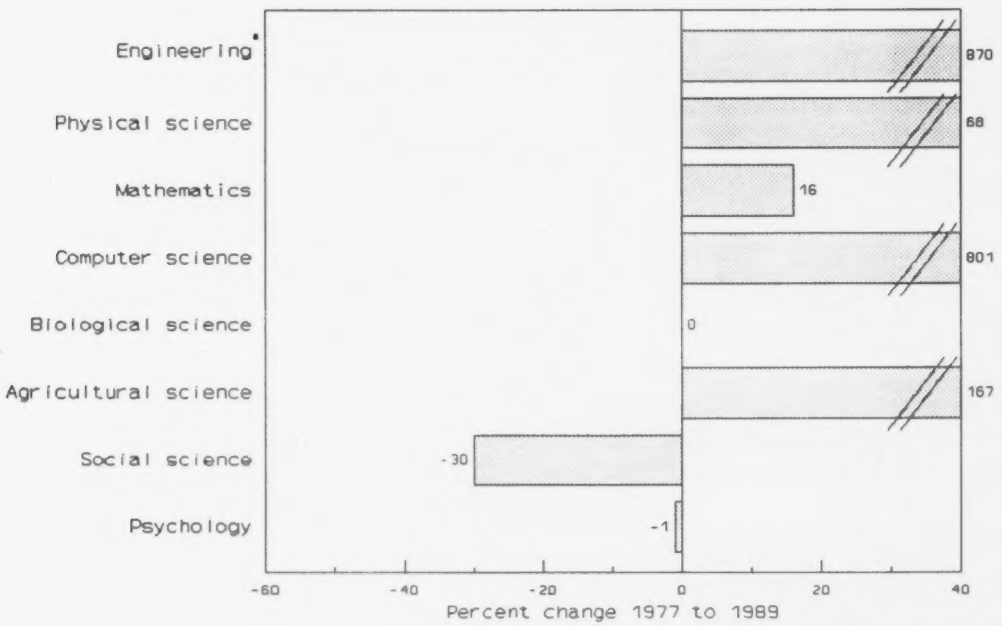
Table 13. Number of bachelor's degrees awarded to black and white women, by science and engineering field: 1977-89, selected years

Field	1977	1979	1981	1985	1987	1989	Percent change 1977 to 1989
	Black, non-Hispanic						
Total, all fields	33,535	35,626	36,206	34,523	33,161	34,924	4.1%
Total science and engineering	9,243	9,443	9,569	9,192	9,487	9,848	6.5
Engineering and engineering technology	90	225	429	722	907	873	870.0
Sciences	9,153	9,218	9,140	8,470	8,580	8,975	-1.9
Natural sciences	1,965	2,279	2,431	3,229	3,643	3,354	70.7
Physical science	198	268	293	373	390	332	67.7
Mathematics	359	332	309	394	435	418	16.4
Computer science	139	242	392	1,107	1,536	1,252	800.7
Biological science	1,218	1,342	1,316	1,241	1,167	1,216	-0.2
Agricultural science	51	95	121	114	115	136	166.7
Social sciences/psychology	7,188	6,939	6,709	5,241	4,937	5,621	-21.8
Social science	5,064	4,775	4,441	3,325	3,147	3,523	-30.4
Psychology	2,124	2,164	2,268	1,916	1,790	2,098	-1.2
Health fields	2,707	2,940	3,167	2,761	2,726	2,850	5.3
Nonscience and engineering	21,585	23,243	23,470	22,570	20,948	22,226	3.0
	White, non-Hispanic						
Total, all fields	369,637	384,394	401,243	421,160	422,940	441,774	19.5%
Total science and engineering	95,681	98,260	101,547	108,911	106,856	108,617	13.5
Engineering and engineering technology	1,891	4,433	6,396	9,952	9,558	8,445	346.6
Sciences	93,790	93,827	95,151	98,959	97,298	100,172	6.8
Natural sciences	32,010	33,605	35,617	42,535	38,877	33,432	4.4
Physical science	4,007	4,602	5,123	5,561	4,514	4,065	1.4
Mathematics	5,218	4,205	4,024	5,654	6,215	5,689	9.0
Computer science	1,275	1,982	3,943	11,133	9,388	5,912	363.7
Biological science	16,967	16,871	16,200	15,009	14,564	14,027	-17.3
Agricultural science	4,543	5,945	6,327	5,178	4,196	33,739	642.7
Social sciences/psychology	61,780	60,222	59,534	56,424	58,421	66,740	8.0
Social science	38,557	37,925	37,037	33,334	33,829	38,147	-1.1
Psychology	23,223	22,297	22,497	23,090	24,592	28,593	23.1
Health fields	40,897	45,757	47,515	37,195	37,269	33,881	-17.2
Nonscience and engineering	233,059	240,377	252,181	275,054	278,815	299,276	28.4

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and and Completions Survey files

Chart 13.

Percent change in bachelor's degrees awarded to black women, by science and engineering (S&E) field: 1977 to 1989



*Includes engineering technology.

NOTE: Large percent changes may reflect small numerical changes; see tables for actual numbers.

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Surveys

Overall, the number of bachelor's degrees awarded to black women was about the same in both 1977 and 1989. The number increased in five of the eight S&E fields; however, especially in computer science, engineering, and physical science.

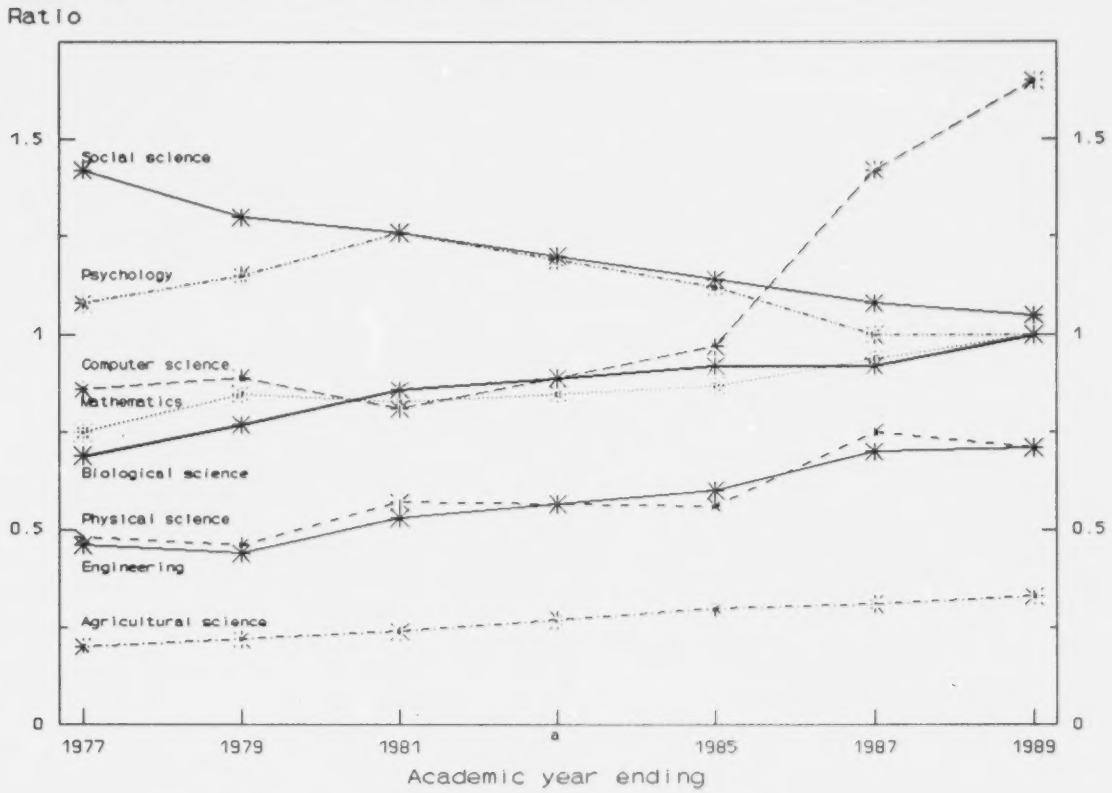
Table 14. Percent distribution of bachelor's degrees awarded to blacks and whites, by science and engineering field: 1977-89, selected years

Field	1977	1979	1981	1985	1987	1989
			Black, non-Hispanic			
Total, all fields	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total science and engineering	33.1	31.1	31.0	31.4	33.2	32.4
Engineering and engineering technology	2.4	2.9	4.0	5.5	6.2	5.5
Sciences	30.8	28.1	27.0	25.9	27.0	26.8
Natural sciences	7.6	7.8	8.1	10.7	12.1	10.9
Physical science	1.2	1.2	1.5	1.4	1.5	1.2
Mathematics	1.2	1.1	1.0	1.3	1.5	1.4
Computer science	0.6	0.8	1.3	3.7	5.1	4.3
Biological science	4.1	4.1	3.7	3.6	3.4	3.4
Agricultural science	0.5	0.6	0.6	0.6	0.5	0.5
Social sciences/psychology	23.1	20.3	18.8	15.2	14.9	16.0
Social science	17.6	15.0	13.4	10.6	10.4	11.1
Psychology	5.5	5.3	5.4	4.6	4.4	4.8
Health fields	5.3	5.6	5.9	5.4	5.6	5.6
Nonscience and engineering	61.5	63.3	63.1	63.2	61.3	62.1
			White, non-Hispanic			
Total, all fields	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total science and engineering	35.9	35.5	34.9	36.3	35.4	33.7
Engineering and engineering technology	5.2	6.6	7.5	9.2	8.8	7.8
Sciences	30.7	28.9	27.4	27.0	26.6	25.9
Natural sciences	13.2	12.8	12.5	13.6	12.6	10.6
Physical science	2.5	2.6	2.6	2.5	2.0	1.7
Mathematics	1.6	1.3	1.2	1.5	1.6	1.5
Computer science	0.7	0.9	1.6	3.8	3.6	2.6
Biological science	5.9	5.3	4.6	3.9	3.7	3.4
Agricultural science	2.5	2.7	2.5	2.0	1.6	1.5
Social sciences/psychology	17.5	16.1	14.9	13.4	14.0	15.4
Social science	12.4	11.5	10.6	9.3	9.6	10.6
Psychology	5.1	4.6	4.3	4.1	4.4	4.8
Health fields	6.4	6.0	6.0	4.4	4.3	4.7
Nonscience and engineering	57.7	57.6	58.1	58.5	59.4	61.6

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Survey files

Chart 14.

Ratio of baccalaureate field choice of blacks to whites, by science and engineering field: 1977-89, selected years



*Data are not available for 1983; these points are the midpoints between the 1981 and 1985 data.

NOTE: This ratio is calculated by dividing the percent of blacks who majored in a field by the percent of whites who majored in that field. The closer the ratio is to 1, the more similar are the field choices of blacks and whites.

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Surveys

In general, choices of field of study became more similar among black and white baccalaureate recipients between 1977 and 1989. The major differences between the two groups were that a higher proportion of blacks majored in computer science, and a lower proportion majored in agricultural science.

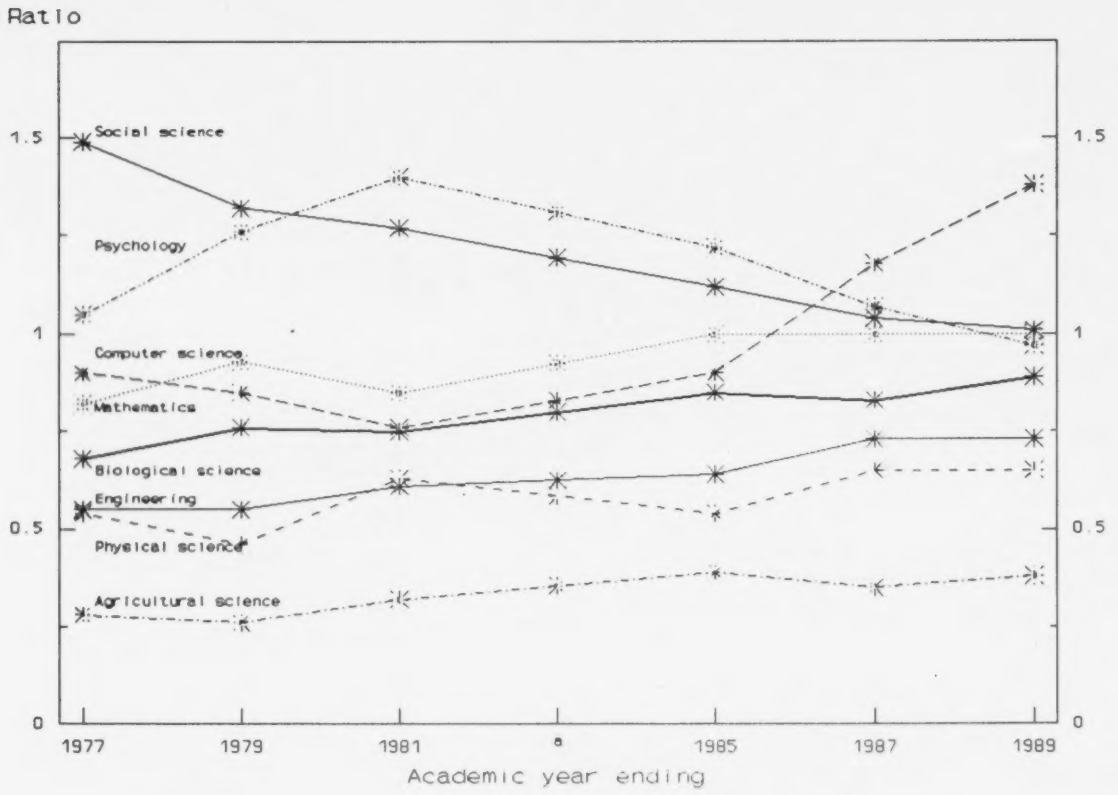
Table 15. Percent distribution of bachelor's degrees awarded to black and white men, by science and engineering fields: 1977-89, selected years

Field	1977	1979	1981	1985	1987	1989
	Black, non-Hispanic					
Total, all fields	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total science and engineering	42.3	39.5	39.5	39.9	41.6	39.0
Engineering and engineering technology	5.1	6.3	8.2	10.5	11.5	10.4
Sciences	37.1	33.2	31.3	29.4	30.2	28.6
Natural sciences	11.7	11.6	12.0	14.1	15.3	12.6
Physical science	2.0	1.8	2.5	2.0	2.0	1.7
Mathematics	1.4	1.3	1.1	1.6	1.8	1.7
Computer science	0.9	1.1	1.6	4.5	5.9	5.5
Biological science	4.8	4.7	3.9	3.5	3.3	3.2
Agricultural science	1.0	1.0	1.1	1.1	0.8	0.8
Social sciences/psychology	25.4	21.6	19.3	15.3	14.9	15.8
Social science	21.0	17.3	15.1	12.1	11.8	12.8
Psychology	4.4	4.3	4.2	3.3	3.0	2.9
Health fields	1.7	1.8	1.8	1.4	1.5	1.4
Nonscience and engineering	57.7	60.5	60.5	60.1	58.4	59.5
	White, non-Hispanic					
Total, all fields	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total science and engineering	46.8	47.0	46.7	48.5	47.5	43.8
Engineering and engineering technology	9.2	11.5	13.4	16.4	15.7	14.2
Sciences	37.6	35.5	33.3	32.2	31.8	29.6
Natural sciences	19.4	19.0	18.3	18.7	17.6	13.9
Physical science	3.7	3.9	4.0	3.7	3.1	2.6
Mathematics	1.7	1.4	1.3	1.6	1.8	1.7
Computer science	1.0	1.3	2.1	5.0	5.0	4.0
Biological science	7.0	6.2	5.2	4.1	4.0	3.6
Agricultural science	3.6	3.8	3.4	2.8	2.3	2.1
Social sciences/psychology	18.2	16.5	15.0	13.5	14.2	15.7
Social science	14.1	13.1	11.9	10.8	11.4	12.7
Psychology	4.2	3.4	3.0	2.7	2.8	3.0
Health fields	2.4	2.4	2.3	1.5	1.4	54.9
Nonscience and engineering	53.2	53.0	53.3	51.5	52.5	1.3

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Survey files

Chart 15.

Ratio of baccalaureate field choice of black men to white men, by science and engineering field: 1977-89 selected years



[a]Data are not available for 1983; these points are the midpoints between the 1981 and 1985 data.

NOTE: This ratio is calculated by dividing the percent of blacks who majored in a field by the percent of whites who majored in that field. The closer the ratio is to 1, the more similar are the field choices of blacks and whites.

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Surveys

Among black and white male bachelor's degree recipients, the differences in field choices in the natural sciences and engineering did not change much from 1977 to 1989. The proportions of black and white men choosing social science or psychology, however, became more similar during this time.

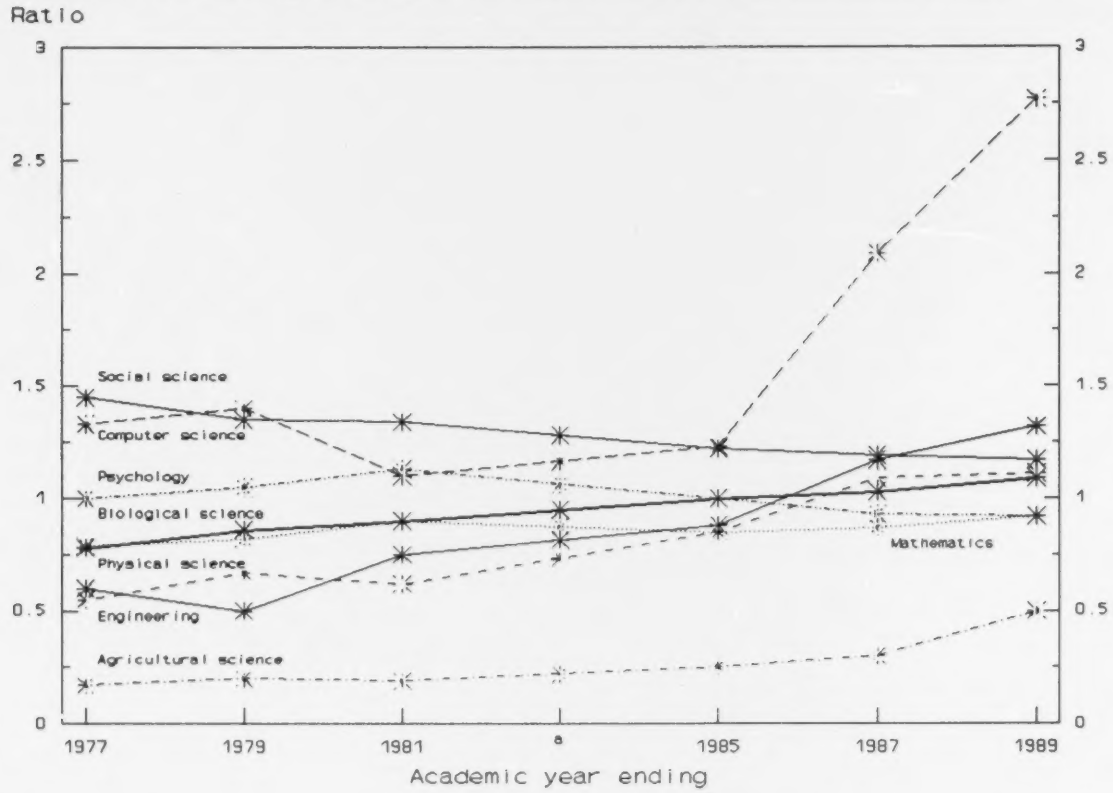
Table 16. Percent distribution of earned bachelor's degrees awarded to black and white women, by science and engineering field: 1977-89, selected years

Field	1977	1979	1981	1985	1987	1989
	Black, non-Hispanic					
Total, all fields	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total science and engineering	27.6	26.5	26.4	26.6	28.6	28.2
Engineering and engineering technology	0.3	0.6	1.2	2.1	2.7	2.5
Sciences	27.3	25.9	25.2	24.5	25.9	25.7
Natural sciences	5.9	6.4	6.7	9.4	11.0	9.6
Physical science	0.6	0.8	0.8	1.1	1.2	1.0
Mathematics	1.1	0.9	0.9	1.1	1.3	1.2
Computer science	0.4	0.7	1.1	3.2	4.6	3.6
Biological science	3.6	3.8	3.6	3.6	3.5	3.5
Agricultural science	0.2	0.3	0.3	0.3	0.3	0.4
Social sciences/psychology	21.4	19.5	18.5	15.2	14.9	16.1
Social science	15.1	13.4	12.3	9.6	9.5	10.1
Psychology	6.3	6.1	6.3	5.5	5.4	6.0
Health fields	8.1	8.3	8.7	8.0	8.2	8.2
Nonscience and engineering	64.4	65.2	64.8	65.4	63.2	63.6
	White, non-Hispanic					
Total, all fields	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total science and engineering	25.9	25.6	25.3	25.9	25.3	24.6
Engineering and engineering technology	0.5	1.2	1.6	2.4	2.3	1.9
Sciences	25.4	24.4	23.7	23.5	23.0	22.7
Natural sciences	8.7	8.7	8.9	10.1	9.2	7.6
Physical science	1.1	1.2	1.3	1.3	1.1	0.9
Mathematics	1.4	1.1	1.0	1.3	1.5	1.3
Computer science	0.3	0.5	1.0	2.6	2.2	1.3
Biological science	4.6	4.4	4.0	3.6	3.4	3.2
Agricultural science	1.2	1.5	1.6	1.2	1.0	7.6
Social sciences/psychology	16.7	15.7	14.8	13.4	13.8	15.1
Social science	10.4	9.9	9.2	7.9	8.0	8.6
Psychology	6.3	5.8	5.6	5.5	5.8	6.5
Health fields	11.1	11.9	11.8	8.8	8.8	7.7
Nonscience and engineering	63.1	62.5	62.8	65.3	65.9	67.7

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Survey files

Chart 16.

Ratio of baccalaureate field choice of black women to white women, by science and engineering (S&E) field: 1977-89, selected years



[a]Data are not available for 1983; these points are the midpoints between the 1981 and 1985 data.

NOTE: This ratio is calculated by dividing the percent of blacks in a given field by the percent of whites in that field. The closer the ratio is to 1, the more similar are the field choices of blacks and whites.

SOURCE: U.S. Department of Education/National Center for Education Statistics, Earned Degrees and Completions Surveys

For all S&E fields, the differences in field choices among black and white female bachelor's degree recipients in 1977 had almost disappeared by 1989. The only disparities remaining in the choices of the two groups were that a lower proportion of black women than of white women majored in agriculture and a much higher proportion majored in computer science.

Table 17. Bachelor's degrees awarded in the natural sciences and engineering to black and white recipients, by Carnegie classification of higher education institution: 1987

Institution type by Carnegie classification 1/	Natural science and engineering 2/ degree recipients	
	Black	White
Total percentage.....	100%	100%
Research-intensive universities.....	22	32
Other doctorate-granting universities.....	16	27
Comprehensive universities...	45	29
Liberal arts colleges.....	12	8
Specialized institutions.....	5	4

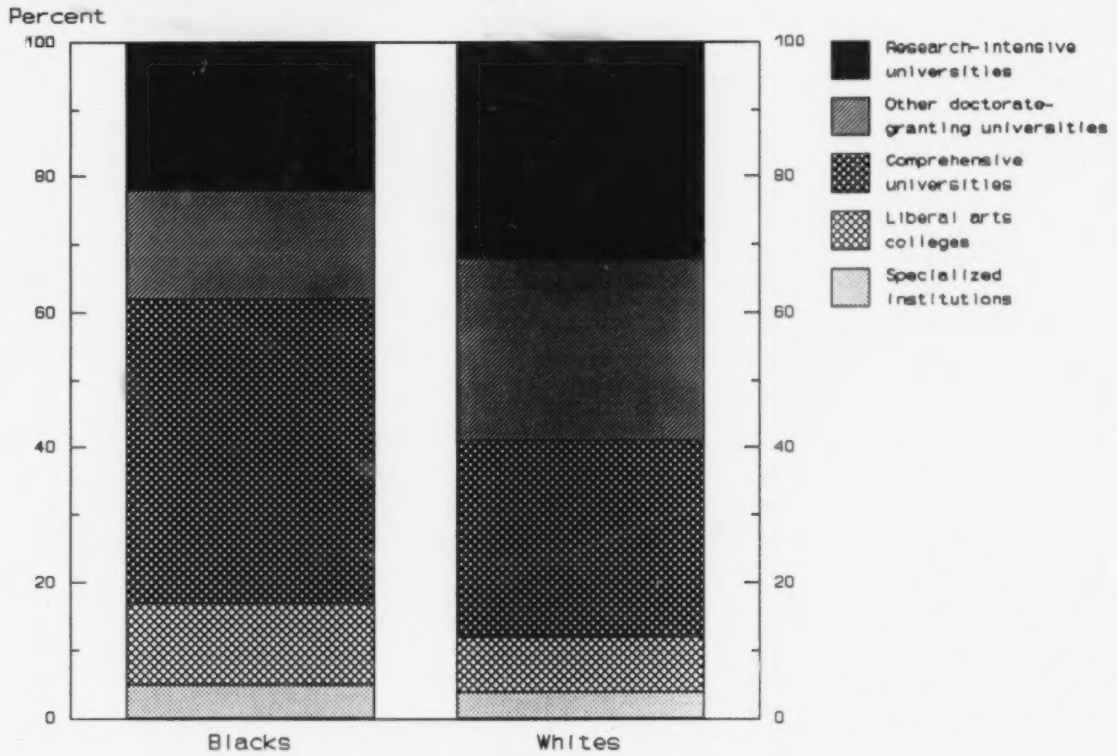
1/ See appendix A for information on the Carnegie classification of higher education institutions.

2/ Excludes engineering technologies.

SOURCE: Department of Education/National Center for Education Statistics, Completions Survey

Chart 17.

Distribution of bachelor's degrees in the natural sciences and engineering awarded to blacks and whites, by Carnegie classification of higher education institution: 1987



SOURCE: U.S. Department of Education/National Center for Education Statistics

Black recipients of baccalaureates in the natural sciences and engineering were more likely to earn their degrees at comprehensive universities (i.e., the 600 institutions that offer liberal arts and specialized programs in business, engineering, etc., but have limited master's degree programs) than at other types of institutions. Whites were more likely to earn their baccalaureates at research-intensive universities or liberal arts colleges.

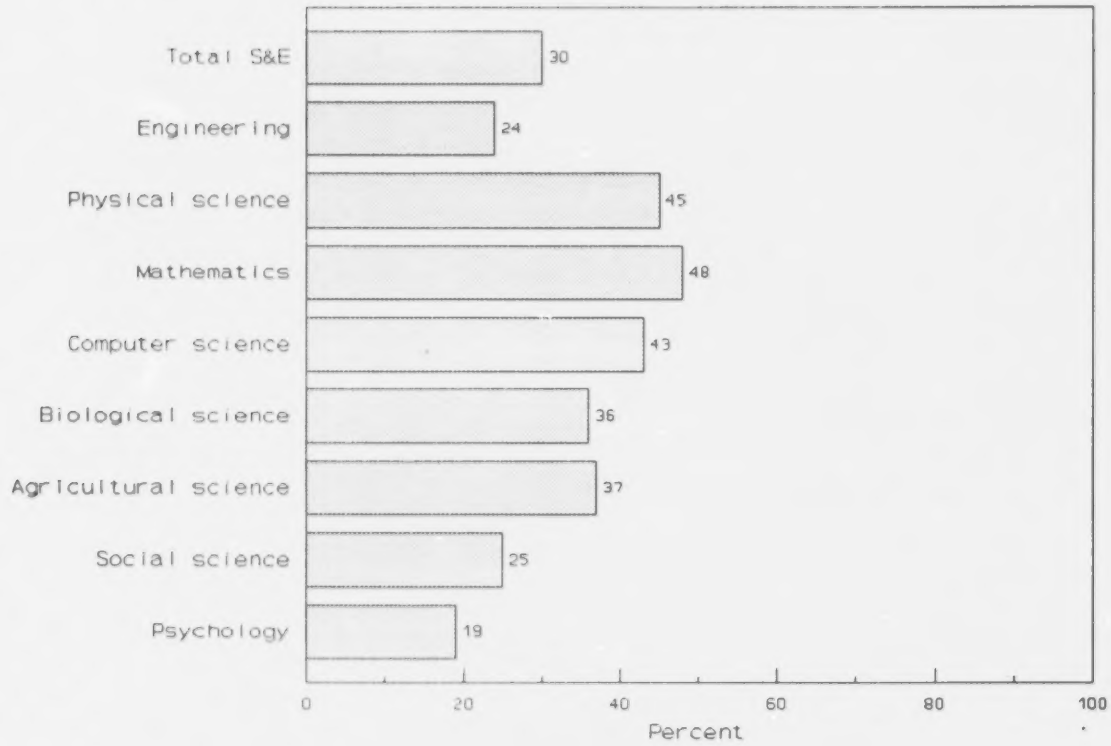
Table 18. Bachelor's degrees awarded to blacks by historically black colleges and universities (HBCUs), by science and engineering field: 1989

Field	Number of institutions		Number of degrees awarded		
	Total	HBCUs	Total	HBCUs	Percent
Total science and engineering	1,184	80	17,174	478	30%
Engineering and engineering technology	303	15	2,315	864	27
Natural sciences.....	1,000	72	6,662	2,552	41
Physical science.....	427	59	823	317	45
Mathematic.....	420	58	834	381	48
Computer science.....	465	54	2,820	1,048	43
Biological science.....	676	72	1,890	693	36
Agricultural science.....	95	17	295	113	37
Social science.....	1,000	79	5,746	1,513	24
Psychology.....	800	53	2,451	549	20

SOURCE: U.S. Department of Education/National Center for Education Statistics, Completions Survey

Chart 18.

Percent of bachelor's degrees awarded to blacks by historically black colleges and universities (HBCUs), by science and engineering (S&E) field: 1989



NOTE: Eighty HBCUs awarded S&E bachelor's degrees in 1989.

SOURCE: U.S. Department of Education/National Center for Education Statistics, Completions Survey

Historically black colleges and universities awarded almost a third of the S&E degrees earned by blacks in 1989. These 80 institutions accounted for an even higher percentage of the baccalaureates awarded to blacks in the natural science fields (41 percent).

Table 19. Bachelor's degrees awarded to blacks by nonhistorically black colleges and universities (non-HBCUs), by science and engineering field: 1977 and 1989

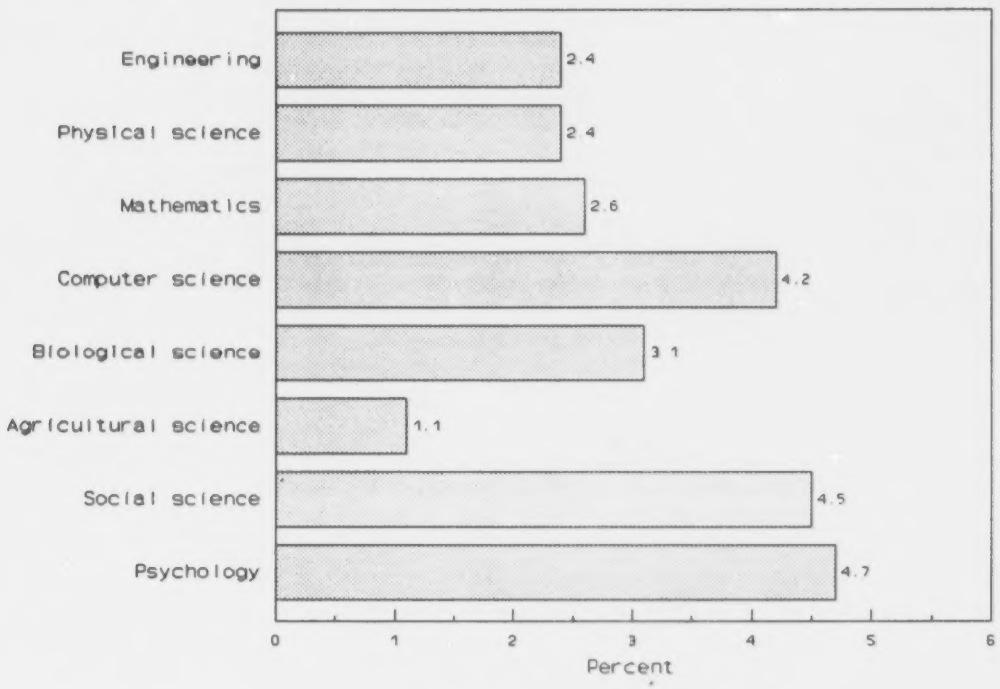
Field	Number of degrees awarded to blacks by non-HBCUs		Black representation in non-HBCUs	
	1977	1989	1977	1989
Total science and engineering.....	12,287	12,927	4.0 %	3.5 %
Engineering and engineering technology	955	1,758	1.9	2.4
Natural science.....	2,550	3,864	2.2	3.0
Physical science.....	414	478	1.9	2.4
Mathematic.....	359	416	2.6	2.6
Computer science.....	231	1,633	3.7	4.2
Agricultural science.....	140	159	0.7	1.1
Biological science.....	1,406	1,178	2.7	3.1
Social science.....	6,936	4,304	6.1	4.5
Psychology.....	2,546	1,989	5.4	4.7

NOTE: In 1989, the number of non-HBCUs that awarded bachelor's degrees in science and engineering was 1,104.

SOURCE: Department of Education/National Center for Education Statistics, Earned Degrees and Completions Survey

Chart 19.

Black representation in nonhistorically black colleges and universities, by science and engineering (S&E) field: 1989



NOTE: The number of nonhistorically black colleges and universities that awarded S&E bachelor's degrees in 1989 was 1,104.

SOURCE: U.S. Department of Education/National Center for Education Statistics

Black representation among degree recipients in nonhistorically black colleges and universities was 3.1 percent or less in all the natural science and engineering fields except computer science.

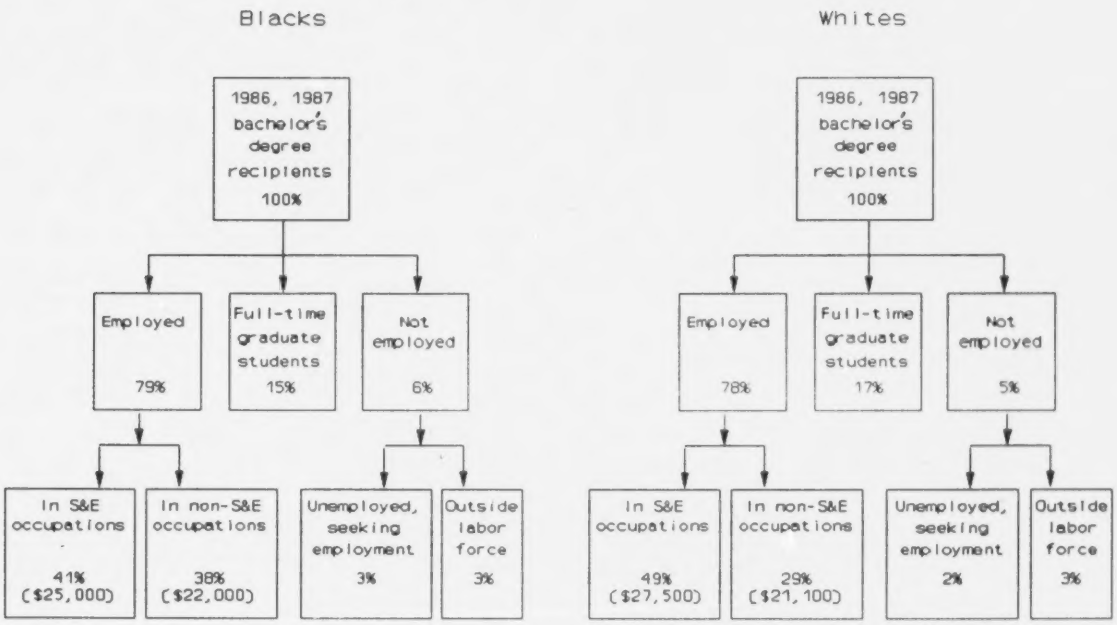
Table 20. Status of recent black and white science and engineering (S&E) bachelor's degree recipients after graduation: 1988

Status in spring 1988	1986 and 1987 S&E bachelor's degree recipients	
	Black	White
Total estimate	25,300	523,800
	(Percentage distribution)	
Total percent	100%	100%
Full-time graduate students	15	17
Employed	79	78
In non-S&E occupation	41	49
Outside S&E occupation	38	29
Not employed	6	5
Unemployed	3	2
Outside labor force	3	3

SOURCE: National Science Foundation/SRS, New Entrants Survey, 1988, unpublished tabulations

Chart 20.

Status of recent black and white science and engineering (S&E) bachelor's degree recipients after graduation



NOTE: Dollar figures in parentheses are median salaries.

SOURCE: National Science Foundation/SRS, New Entrants Survey

About 15 percent of recent black S&E baccalaureate recipients enrolled in graduate school after graduation. Among those who entered the labor force, a higher percentage of blacks than whites was employed in non-S&E occupations.

Table 21. First-time enrollment in graduate school, by broad science and engineering field: 1986-88

Field	Black U.S. citizens			Percent change 1986 to 1988	
	1986	1987	1988	Blacks	Whites
Total, all fields*.....	5,564	5,857	6,701	20%	-1%
Science and engineering.....	1,221	1,333	1,518	24	-12
Engineering.....	225	233	237	5	-10
Physical sciences.....	174	203	231	33	-7
Life sciences*.....	413	452	547	32	-2
Social sciences and psychology...	409	445	503	23	5
Nonscience and engineering.....	4,343	4,524	5,183	19	4

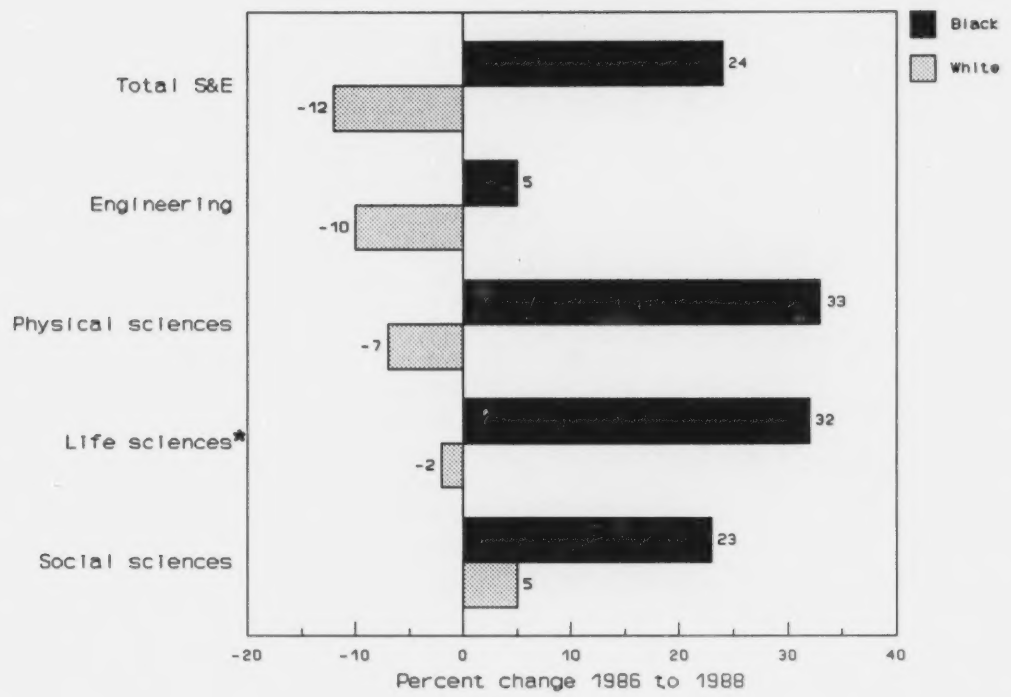
*Includes biology, agriculture, and health fields.

NOTE: This table is based on the responses of the 267 universities (out of the 567 surveyed) that provided first-time enrollment data for all 3 years.

SOURCE: Council of Graduate Schools, Survey of Graduate Enrollment, unpublished tabulations

Chart 21.

Percent change in first-time enrollment of blacks and whites in graduate school, by broad science and engineering (S&E) field: 1986 to 1988



*Includes biology, agriculture, and health fields.

NOTE: This chart is based on the responses of the 267 universities (out of the 567 surveyed) that provided first-time enrollment data for all 3 years.

SOURCE: Council of Graduate Schools, Survey of Graduate Enrollment

Partial data from graduate schools indicate that black first-time graduate enrollment increased in S&E fields from 1986 to 1988 while white enrollment declined.

V. Undergraduate Origins of S&E Doctorates Recipients

Table 22. Percent of 1987 and 1988 science and engineering doctorate recipients who attended a 2-year college, by race/ethnicity

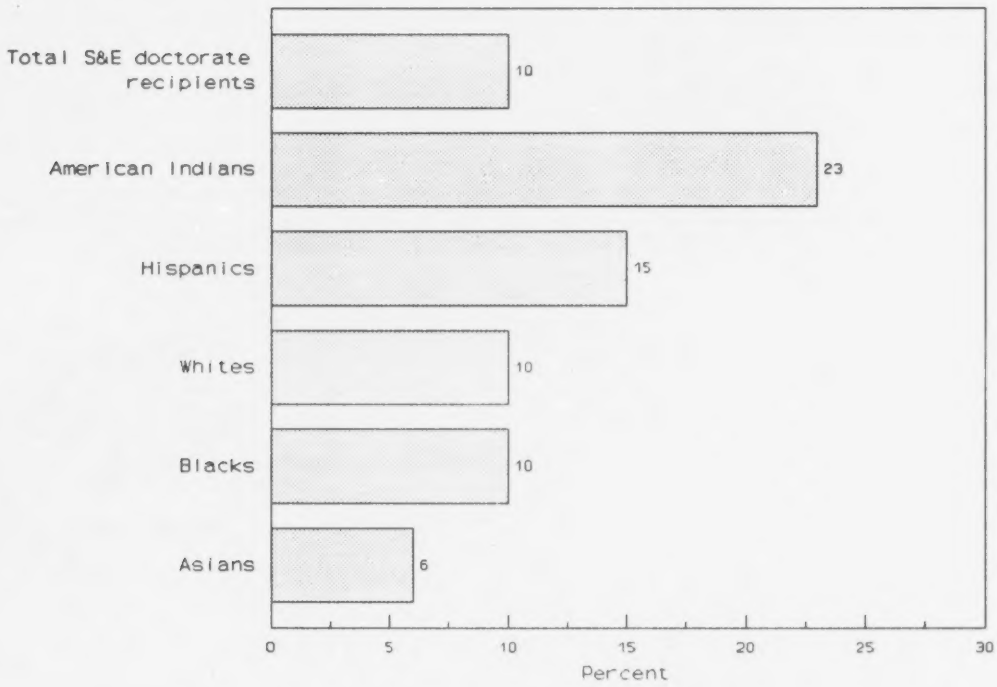
Racial/ethnic group	1987 and 1988 science/ engineering doctorate recipients*	Attended 2-year college	
		Number	Percent
American Indian.....	82	19	23%
Asian.....	851	53	6
Black.....	441	42	10
Hispanic.....	594	88	15
White.....	22,156	2,121	10

*Excludes doctorate recipients for whom attendance at a 2-year college was not known.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Chart 22.

Percent of 1987 and 1988 science and engineering (S&E) doctorate recipients who attended a 2-year college, by race/ethnicity



NOTE: Includes doctorates awarded to U.S. citizens only.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

One out of 10 black S&E doctorate recipients had begun his or her college education at a 2-year college, a proportion similar to that of whites.

Table 23. Percent distribution of all 1986-88 black and white science and engineering doctorate recipients, by Carnegie classification of baccalaureate institution

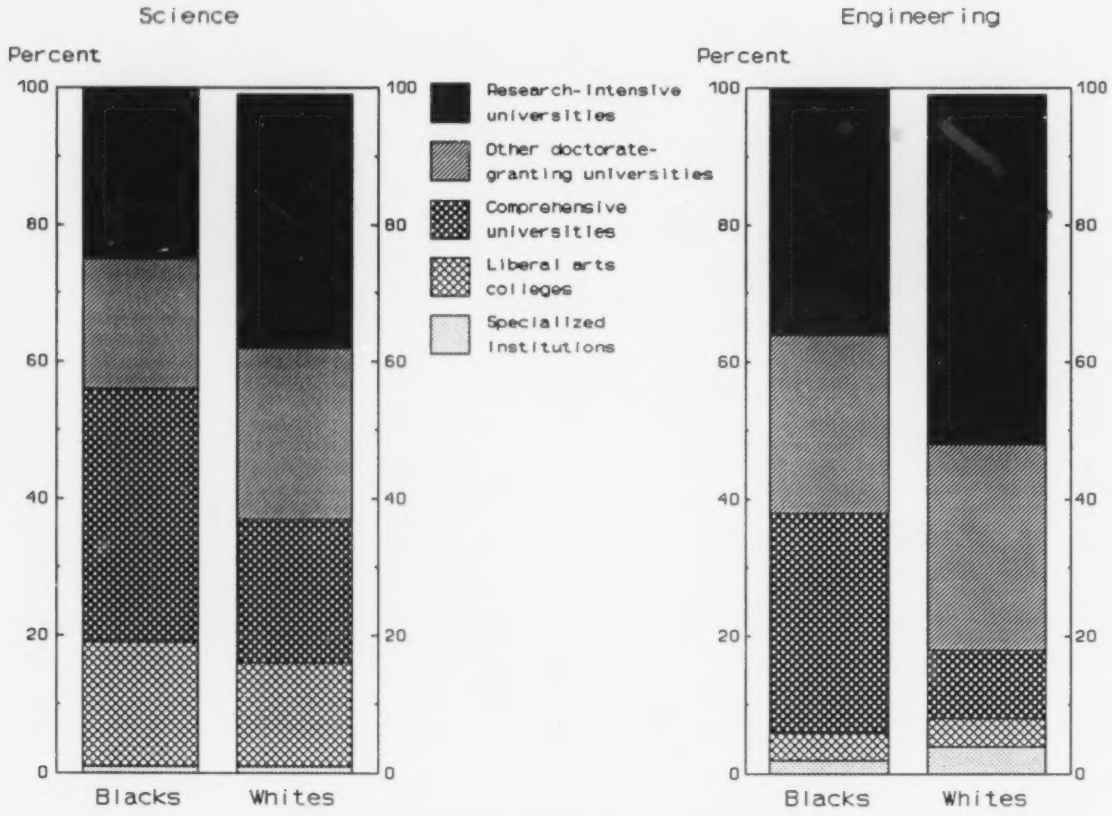
Institution type by Carnegie classification	1986-88 doctorate recipients	
	Black	White
	Science doctorate recipients	
Total.....	100%	100%
Research-intensive universities.....	26	37
Other doctorate-granting universities.....	19	25
Comprehensive institutions	37	21
Liberal arts colleges.....	18	15
Specialized institutions.....	1	1
	Engineering doctorate recipients	
Total.....	100%	100%
Research-intensive universities.....	36	51
Other doctorate-granting universities.....	26	30
Comprehensive institutions...	32	10
Liberal arts colleges.....	4	4
Specialized institutions.....	2	4

NOTES: Excludes institutions that closed and others for which classifications could not be determined.
Because of rounding, detail may not add to totals.
See appendix A for information on the Carnegie classification of higher education institutions.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates.

Chart 23.

Baccalaureate origins of 1986-88 black and white doctorate recipients in science and engineering (S&E), by Carnegie classification of institution



SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Black S&E doctorate recipients were less likely than whites to have received their undergraduate training in institutions with doctoral degree or research programs.

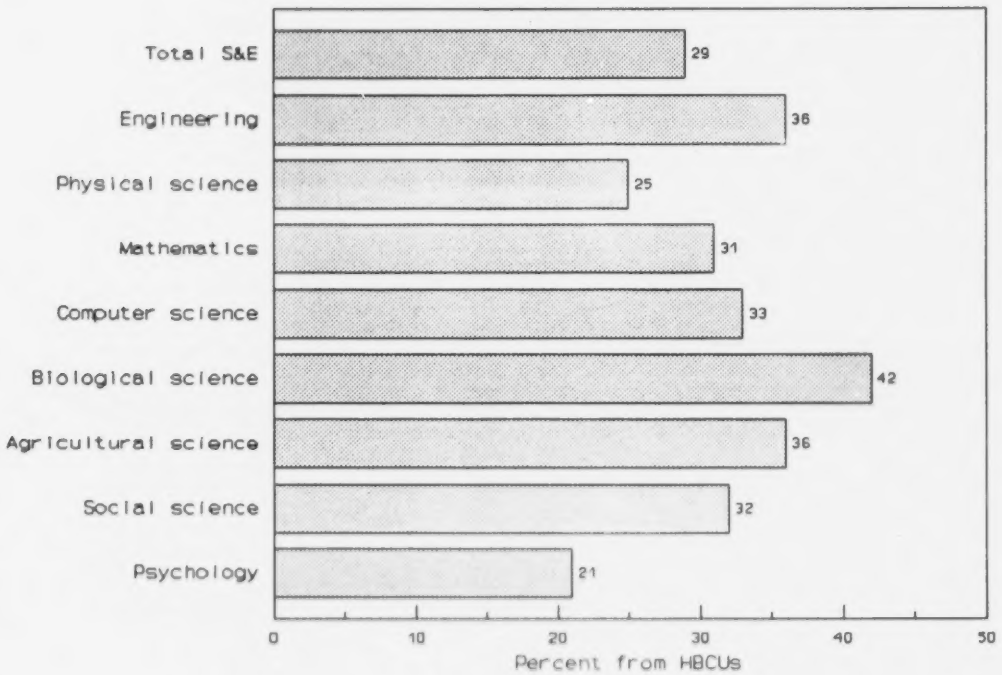
Table 24. Black U.S. citizen doctorate recipients (1986-88) with baccalaureate origins in historically black colleges and universities (HBCUs), by science and engineering field

Field of doctorate	Total number	Percent that earned a bachelor's degree at an HBCU
Total science and engineering.....	691	29%
Engineering.....	45	36
Sciences.....	646	28
Natural sciences.....	229	36
Physical science.....	67	25
Mathematical science.....	16	31
Computer science.....	3	33
Biological science.....	121	42
Agricultural science.....	22	36
Social sciences/psychology.....	417	24
Social science.....	131	32
Psychology.....	286	21

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates.

Chart 24.

Black U.S. citizen doctorate recipients (1986-88) with baccalaureate origins in historically black colleges and universities (HBCUs), by science and engineering (S&E) field



NOTE: The number of HBCUs awarding S&E bachelor's degrees was 80.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Almost 3 out of 10 recent black S&E doctorate recipients had baccalaureate origins in an HBCU. In one field, biological science, HBCUs provided the baccalaureate education of 42 percent of recent black doctorate recipients.

Appendixes:

A. Sources of Data

B. Bachelor's Degrees Awarded to Blacks in Science and Engineering Fields, by Institution: 1977-89

NOTE: Similar tables for each of the major fields of science and for engineering are also available from the author upon request.

Appendix A. Sources of Data

The information in this report was obtained from many sources, primarily Federal agencies. The data were collected using several research methods including surveys of a universe (such as all colleges) or of a sample. Because of differences in procedures, timing, phrasing of questions, and interviewer training, results from the different sources are not strictly comparable. Users should take particular care when comparing data from different sources. Following are descriptions of the information sources and data collection methods, grouped by sponsoring organizations. NSF may be considered the source for the data tabulations in this report unless the title of a book is provided in the table source citation.

a. Federal Agency Sources

U.S. Bureau of the Census

Current Population Survey (CPS)

Current estimates of school enrollment and social and economic characteristics of students are based on data collected in the Census Bureau's monthly survey of about 60,000 households, the CPS. The CPS consists of 729 sample areas comprising 1,973 counties, independent cities, and minor civil divisions throughout the 50 states and the District of Columbia. The current sample was selected from 1980 Census files and is updated periodically to reflect new housing construction.

The primary function of the monthly CPS is to collect data on labor force participation of the civilian noninstitutional population (the survey excludes military personnel and inmates of institutions). In October of each year, however, the CPS asks questions on school enrollment by grade and other school characteristics about each member of the household.

The estimation procedure used for the monthly CPS data involves inflating weighted sample results to independent estimates for the total civilian noninstitutional population by age, sex, race, and Hispanic origin. These independent estimates are derived from decennial census statistics of the population: Statistics on births, deaths, and immigration and emigration; and statistics on the strength of the Armed Forces. Generalized standard error tables are provided in the Current Population Reports (CPRs). The data are subject to both nonsampling and sampling errors.

Further information is available in the CPR Series P-20, or by contacting --

Education and Social Stratification Branch
Population Division
Bureau of the Census
U.S. Department of Commerce
Washington, D. C. 20233

U.S. Department of Education
National Center for Education Statistics

Integrated Postsecondary Education Data Systems (IPEDS)

The IPEDS is a survey of all postsecondary institutions, including universities and colleges as well as institutions offering technical vocational education beyond the high school level. This survey, which was initiated in 1986, replaces the Higher Education General Information Survey (HEGIS).

IPEDS components are institutional characteristics, including institutional activity; fall enrollment, including age and residence; fall enrollment in occupationally specific programs; completions; finance; staff; salaries of full-time instructional faculty; and academic libraries. The higher education portion of this survey is a census of all education institutions.

Higher Education General Information Survey (HEGIS)

This survey was a coordinated effort administered by the National Center for Education Statistics (NCES), which acquired and maintained statistical data on the characteristics and operations of institutions of higher education. Implemented in 1966, HEGIS was an annual universe survey of institutions listed in the latest NCES Education Directory, Colleges and Universities. It has since been replaced by the IPEDS (see above).

Opening Fall Enrollment in Colleges and Universities. This survey was part of the HEGIS series, and its response rate was always relatively high, e.g. 92 percent in 1985. Major sources of nonsampling error for this survey were classification problems, the unavailability of needed data, interpretation of definitions, the survey due date, and operational errors.

Earned Degrees Conferred. This survey was always part of the HEGIS series. The degree classification taxonomy, however, was revised in academic years 1970/71 through 1982/83. Although information from survey years 1970/71 through 1981/83 is directly comparable, the 1982/83 classification was used on tables with trends on degrees up to 1989 in order to provide consistent data for the entire period. Nonresponse did not appear to be a signficicant source of nonsampling error for this survey. The return rate over the years was extremely high, with the response rate for the 1983/84 survey at 95 percent. Nonsampling error caused by imputation was also minimal for all degree recipients, but may have had a greater effect on the data for racial/ethnic minorities after 1980/81 because the imputation method was changed each year.

The major sources of nonsampling error for this survey were differences between the HEGIS program taxonomy and taxonomies used by the colleges, classification of double majors and double degrees, operational problems, and survey timing. In the 1979 validation study, these sources of nonsampling error were found to contribute to an error rate of 0.3

percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. No errors were identified in over 50 percent of the fields selected for the validation study. Categories of fields in which significant differences occurred were business and management, education, engineering, letters and psychology. It was also shown that differences in proportion to the published figures were less than 1 percent for most of the selected fields in which some errors had been identified.

Beginning with the 1986/87 academic year, the IPEDS Completions Survey replaced the HEGIS Earned Degrees Conferred survey. There were no imputations for nonresponse for race/ethnicity in the Completions Survey in 1987 or 1989.

Questions concerning HEGIS/IPEDS can be directed to --

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, D.C. 20208

National Survey of Postsecondary Faculty (NSOPF-88)

The NSOPF was a comprehensive survey of higher education instructional faculty conducted in the fall of 1987. It was the first such survey conducted after 1963. It gathered information regarding the backgrounds, responsibilities, workloads, salaries, benefits, and attitudes of both full- and part-time instructional faculty in 2- and 4-year institutions under both public and private control. In addition, information was gathered from institutional and department-level respondents on such issues as faculty composition, new hires, departures and recruitment, retention, and tenure policies.

The study comprised three major parts: (1) A survey of institutional-level respondents at a stratified random sample of 480 U.S. colleges and universities; (2) a survey of a stratified random sample of 3,029 eligible department chairpersons (or their equivalent) within the participating 4-year institutions; and (3) a survey of a stratified random sample of 11,013 eligible faculty members within the participating institutions. Response rates to the three surveys were 88 percent, 80 percent, and 76 percent, respectively.

The universe of institutions from which the sample was selected consisted of all accredited nonproprietary U.S. postsecondary institutions that granted a 2-year or higher degree and the accreditation of which at the higher education level was recognized by the U.S. Department of Education. This included religious, medical, and other specialized postsecondary institutions. According to the 1987 IPEDS, the universe comprised 3,159 institutions. The universe did not include proprietary 2- and 4-year institutions or less than 2-year postsecondary institutions.

Further information on this survey may be obtained from --

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, D. C. 20208

National Longitudinal Study of the High School Class of 1972 (NLS-72)

The NLS-72 was the first of a series of ongoing national longitudinal studies conducted by NCES. In this study comprehensive base year data were collected from a nationally representative sample of high school seniors in the spring of 1972, prior to high school graduation. These students were contacted again in October 1973 through April 1974, October 1974 through April 1975, October 1976 through April 1977, October 1979 through May 1980, and most recently, May through September 1986.

In addition to these five followup studies, the Postsecondary Education Transcript Study (PETS) was conducted in 1984. At that time all transcripts were requested for students who had indicated in one or more of the first four followup studies that they had received some postsecondary education.

Information concerning study design, variable definitions, nonresponse rates, and other technical information for the student surveys can be found in the National Longitudinal Study: Base Year through Fourth Follow-up (1979) Data Users Manual. Similar information concerning PETS data can be found in the National Longitudinal Study of the High School Class of 1972 Postsecondary Education Transcript Study Data File User's Manual and in the Addendum to NLS-72 Postsecondary Education Transcript File Data User's Manual for Revised and Reduced Student, Transcript, Term, and Course Files.

For addtional information, contact --

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, D. C. 20208

High School and Beyond (1980 Seniors) (HS&B)

HS&B is the second longitudinal study conducted by NCES. This study, which was initiated in 1980, included two high school cohorts--the graduating class of 1980 (the senior cohort), and the graduating class of 1982 beginning in 1980 when the students were sophomores (the sophomore cohort). The tables in this *Undergraduate Education* report are based on data from the senior cohort surveys. These students were re-surveyed an additional three times: in March through July of 1982, 1984, and 1986.

In addition to these three followup studies, a number of supplemental data-collection efforts have been undertaken. As with the NLS-72 cohort, one of these supplemental studies involved the collection of postsecondary transcripts. This effort was somewhat more limited, however, in that transcripts were collected for all students who indicated any postsecondary education in either of the first two followups or within 4 years of initial contact. These transcripts covered the first 4.5 years of postsecondary enrollment.

Information concerning study design, variable definitions, nonresponse rates, and other technical information about the student surveys can be found in High School and Beyond 1980 Senior Cohort Third Follow-up (1986) Data File User's Manual, Volumes I and II. Similar information concerning transcript data can be found in High School and Beyond Postsecondary Education Transcripts Study Data File User's Manual.

For additional information contact--

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, D. C. 20208

Postsecondary Education Transcript Studies (PETS)

Estimates in the tables of this report are based on information from transcripts for 7,807 students in the NLS-72 cohort who had transcript information indicating some postsecondary education attendance prior to January 1973 (those who first entered advanced education in the year of high school graduate) and/for 5,164 students in the HS&B senior cohort who first entered postsecondary education January 1981. Only data through December 1977 were used to calculate level attained or length of time needed to complete any level for the NLS-72 cohort, because this was equivalent to what was available for the HS&B-80 senior cohort. No self-reported information on postsecondary education attendance was used. Because the study was limited to information available in transcripts, estimates of total participation in postsecondary education may vary somewhat from similar self-reported figures.

Given the nature of college transcripts, many inconsistencies exist in the data that may affect the estimates reported. Missing term and degree completion dates or missing transcripts affected about the same proportion of students in both 1972 and 1980 cohorts (slightly over 20 percent). Because both sets of transcripts were collected and coded at the same time, problems were dealt with consistently in both cohorts.

For more information about the estimates or the NLS or HS&B data bases, contact --

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, D. C. 20208

National Science Foundation
Division of Science Resources Studies

New Entrants Survey

The 1988 New Entrants Survey provides data on the demographic, education, and employment characteristics of recent college graduates in science and engineering (S&E) fields. These data include estimates of the recent S&E bachelor's and master's degree recipients who have entered the labor force, and thus are a new component of the Nation's population of scientists and engineers.

A national sample of recent college graduates was drawn for each of two periods--those graduating between July 1, 1985, and June 30, 1986 (1986 graduating class), and those graduating between July 1, 1986, and June 30, 1987 (1987 graduating class).

A two-stage probability sample of graduates was employed for this study. In the first stage, 274 universities and colleges were selected as the primary sampling units (PSUs). (A special stratum of predominately minority universities was also assembled; six predominately black universities and three Hispanic PSUs were selected with probabilities proportional to measures of size.)

The second stage of the sample involved the selection of graduates within PSUs. The sampling frame consisted of lists of graduates supplied by the universities chosen in the first stage sample. The lists generally included data on degree received, major field of study, year of graduate, and mailing address. Within Hispanic PSUs, all students were oversampled by a factor of two. Similarly, all students within black PSUs were also oversampled by a factor of two.

In terms of all individuals for whom a usable address was obtained and who were eligible to participate (i.e., those who received either a bachelor's or master's degree in an S&E field in either 1986 or 1987), the survey achieved an unweighted return rate of 77.5 percent. Generalized standard errors for the reported S&E fields and definitions are provided in *Characteristics of Recent Science and Engineering Graduates: 1988*, National Science Foundation, NSF 90-305.

Further information can be obtained from NSF by contacting--

Division of Science Resources Studies
National Science Foundation
1800 G Street, N.W., Room L-609
Washington, D. C. 20550

Survey of Earned Doctorates (SED)

The SED has been conducted since 1958 by the National Academy of Sciences, National Research Council (under contract for the National Science Foundation), and four other Federal agencies. Information from this survey becomes part of the Doctorate Records File, which includes about 950,000 records for doctorates awarded since 1920. (The file contains only name, gender, field, and doctorate institution for recipients from 1920 to 1957.)

SED forms are distributed to all regionally accredited universities in the United States and its territories that confer research doctorates. In 1988, there were 358 such institutions. The forms are collected, in cooperation with the Graduate Deans, directly from the individuals who have completed requirements for a research doctorate. Research doctorate degrees such as the Ph.D., Ed.D., or D.Sc. are included in the survey, but nonresearch doctorates and first-professional degrees (such as the J.D. or M.D.) are not. The data for a given year include the research doctorates awarded in the 12-month period ending June 30 of that year.

Research doctorate recipients are asked to provide educational history and demographic information. Approximately 93 to 95 percent or higher of the annual cohorts of doctorate recipients responded to the questionnaire between 1986 and 1988. For nonrespondents, partial data (on degree, field, gender of recipients, and baccalaureate institution) taken from public sources such as commencement programs, are added to the file. Estimations are not made for other missing data. Approximately 2 percent of respondents did not provide information on their race or baccalaureate-origin institution.

Further information on S&E doctorates may be obtained from NSF by contacting --

Division of Science Resources Studies
National Science Foundation
1800 G Street, N.W., Room L-609
Washington, D. C. 20550

Further information on doctorates in all fields can be obtained from the Summary Report: *Doctorate Recipients from United States Universities*, various years, published by the National Research Council, or by contacting --

Office of Scientific and Engineering Personnel
National Research Council, Room 412GN
2101 Constitution Avenue, N.W.
Washington, D. C. 20418

b. Non-Federal Agency Sources

American Freshman National Norms

The Cooperative Institutional Research Program at the University of California-Los Angeles collects data annually on freshman. The survey data are weighted to provide a normative picture of the American college freshman population for persons engaged in policy analysis, human resource planning, campus administration, educational research, guidance and counseling, as well as for the general community of students and parents. The survey instrument, the Student Information Form (SIF), is revised annually to reflect the changing concerns of the academic community and of others who use the information. Beginning in 1972, all institutions that have entering freshman classes and that respond to the U.S. Department of Education's Higher Education General Information Survey (now IPEDS) were invited to participate. The responses are therefore a self-selecting sample.

Although almost 300,000 entering freshmen at nearly 600 colleges and universities returned their forms in time for their data to be considered for inclusion, the normative data are based on responses from only approximately 200,000 freshmen who had entered 40, 2- and 4-year institutions. The national norms are based only on data from institutions for which the coverage of entering freshmen was judged to be representative. This judgment is based on the percentage of first-time, full-time freshmen who completed the SIF and on whether the forms were handed out for completed and return during registration, freshman orientation, or the first few weeks of classes. Four-year colleges are included in the national norms if over 85 percent of their first-time, full-time freshmen completed the form; universities must have over 75 percent participation, while 2-year colleges must have 50 percent.

The SIF is designed to elicit a wide range of biographic and demographic data, as well as data on the student's high school background, career plans, educational aspirations, financial arrangements, high school activities, and current attitudes. Those data meeting minimal quality requirements for inclusion in the norms were differentially weighted to represent the population of entering freshmen at all higher educational institutions in the United States. Part-time students and those who are not first-time colleges students (i.e., transfers and former enrollees) were excluded from the normative sample.

Further information on this survey may be obtained by contacting --

Cooperative Institutional Research Program
Higher Education Research Institute
University of California at Los Angeles
320 Moore Hall
Los Angeles, CA 90024

Carnegie Foundation
Carnegie Classification of Higher Education Institutions

The classification system for institutions used in this report was modified from the 1987 Carnegie classification. The 1987 Carnegie classification includes all colleges and universities in the United States listed in the 1985-86 *Higher Education General Information Survey of Institutional Characteristics*.

It groups institutions into categories on the basis of the level of degree offered--ranging from prebaccalaureate to the doctorate--and the comprehensiveness of their missions. Five types of institutions were identified in accordance with this classification.

Research-Intensive Universities: These are the 70 leading universities in terms of Federal financial support of research and development in at least two of three academic years (1982/83, 1983/84, and 1984/85), provided they awarded at least 50 doctorates in 1983/84. Examples include University of California at Berkeley, the University of Texas at Austin, Duke University (NC), and the University of Chicago (IL).

Other Doctorate-Granting Universities: Besides the research-intensive universities, there are other major doctorate-granting institutions, classified by Carnegie in the categories of Research Universities II, Doctorate-Granting I, and Doctorate-Granting II. These institutions have established doctoral programs that awarded at least 20 Ph.D.'s in any field, or 10 Ph.D.'s in three or more fields, in 1983/84. Examples of such universities include Iowa State University, University of South Florida, Howard University (DC), and Rensselaer Polytechnic Institute (NY).

Comprehensive Institutions: These are institutions that offered a liberal arts program as well as other programs such as engineering, business administration, and nursing. Many comprehensive institutions offered master's degrees, but all either lacked a doctoral program or the program was extremely limited. Former teachers colleges that broadened their curricula in the 1960s are included in this category. Examples of comprehensive institutions include Glassboro State College (NJ), Old Dominion University (VA), Creighton University (NE), and Aquinas College (MI).

Liberal Arts Colleges: These are predominantly bachelor's-degree-granting institutions that award more than half their degrees in liberal arts. Institutions such as Oberlin College are included, even though they have master's degree programs. This category also includes a

group of colleges that awarded less than half their degrees in liberal arts fields, but were too small (i.e., less than 1,500 students) to be considered comprehensive. Examples of colleges in this category include Reed College (OR), Bryn Mawr College (PA), the College of Charleston (SC), and Fisk University (TN).

Specialized Institutions: Specialized institutions are those with a primary focus on technical, professional, or corporate programs in a range of areas such as theology, medicine, engineering, business, art, music, law, and teaching. Examples of specialized institutions include the New Jersey Institute of Technology, the Princeton Theological Seminary (NJ), the University of Oklahoma Health Science Center, and the Teacher's College of Columbia (NY).

Table A. Institutional categories derived from the 1987 Carnegie classification system

Modified classification	Carnegie codes	Number in group	Number awarding S&E baccalaureates
Research-intensive	1.1	70	70
Other doctorate-granting	1.2-1.4	143	138
Comprehensive	2.1-2.2	601	568
Liberal arts	3.1-3.2	564	518
Specialized	5.1-5.9	643	177

NOTE: Excludes institutions that did not award bachelor's or higher level degrees.

SOURCE: Carnegie Foundation. See the Chronicle of Higher Education, "Carnegie Foundation's Classifications of More Than 3,300 Institutions of Higher Education," July 8, 1987, pp. 22-30, to determine an institution's classification.

APPENDIX B

Bachelor's degrees awarded to blacks in science and engineering fields, by institution: 1977-89, selected years

NOTE: Similar tables for each of the major fields of science and for engineering are also available from the author upon request.

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Alabama						
Alabama Agricultural & Mechanical Univ (H)	139	157	90	84	123	95
Alabama State University (H)	102	77	103	98	91	63
Athens State College	3	10	8	9	6	11
Auburn University-All Campuses	14	19	22	38	39	48
Birmingham Southern College	6	3	7	3	0	2
Daniel Payne College	5	0	0	0	0	0
Faulkner University	0	0	0	2	2	1
Huntingdon College	0	2	7	3	1	1
Jacksonville State University	12	24	18	14	20	10
Judson College	1	2	3	4	1	1
Livingston University	4	1	4	18	16	16
Miles College (H)	39	23	14	20	10	10
Mobile College	3	8	5	7	4	2
Oakwood College (H)	39	54	29	30	35	30
Samford University	2	3	10	7	2	1
Southern Benedictine College	3	0	0	0	0	0
Spring Hill College	7	3	2	1	4	6
Stillman College (H)	46	43	46	51	36	41
Talladega College (H)	55	56	61	32	36	26
Troy State University-Dothan	2	5	2	2	3	6
Troy State University-Montgomery	17	12	14	5	8	14
Troy State University-Troy	4	25	20	39	12	31
Tuskegee University (H)	179	176	197	150	183	149
University of Alabama	28	34	62	64	61	51
University of Alabama-Birmingham	32	30	40	36	38	26
University of Alabama-Huntsville	2	2	6	2	10	10
University of Montevallo	2	3	2	0	4	2
University of North Alabama	6	7	6	8	8	5
University of South Alabama	29	12	18	19	20	18
Alaska						
University of Alaska-Anchorage	2	5	5	1	0	1
University of Alaska-Fairbanks	0	0	0	1	2	4
University of Alaska-Southeastern	0	0	0	2	0	0
Arizona						
Arizona State University	10	14	19	18	17	35
Devry Institute of Technology	1	1	7	9	8	5
Grand Canyon College	2	4	1	7	4	2
Northern Arizona University	5	5	1	7	5	8
University of Arizona	7	9	12	8	14	14
Arkansas						
Arkansas Baptist College (H)	29	37	32	10	0	4
Arkansas College	2	2	1	0	0	3
Arkansas State University-All Campuses	11	22	24	21	13	7
Arkansas Tech University	4	5	3	1	2	3

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Harding University-All Campuses	2	0	0	2	0	1
Henderson State University	15	12	9	6	8	8
Hendrix College	5	2	6	6	7	7
John Brown University	1	0	1	1	0	0
Ouachita Baptist University	2	3	3	5	2	4
Philander Smith College (H)	14	17	8	14	13	11
Southern Arkansas University-All Cam	11	6	6	7	5	4
University of Arkansas-Fayetteville	11	8	19	24	24	31
University of Arkansas-Little Rock	11	16	13	3	8	11
University of Arkansas-Monticello	8	4	6	8	4	6
University of Arkansas-Pine Bluff (H)	75	70	68	37	45	59
University of Central Arkansas	17	10	14	11	8	3
University of the Ozarks	1	0	1	0	2	0
California						
Azusa Pacific University	3	1	0	4	0	2
Bethany Bible College	1	0	0	0	0	0
Biola University	0	0	0	0	3	1
California Baptist College	1	1	0	5	2	2
California College of Podiatric Medicine	0	0	1	0	0	0
California Institute of Technology	9	4	1	1	4	4
California Lutheran University	0	1	2	1	1	1
California Maritime Academy	0	1	0	2	3	2
California Poly St U, San Luis Obispo	26	8	8	5	9	7
California Sch Prof Psychology, L A	1	0	0	0	0	0
California Sch Prof Psychology,San Diego	1	0	0	0	0	0
California State College, Bakersfield	9	4	0	1	7	6
California State Polytech Univ, Pomona	21	15	16	15	14	21
California State Univ, Chico	10	6	6	7	2	11
California State Univ, Dominguez Hills	130	107	67	62	52	44
California State Univ, Fresno	21	19	18	17	13	15
California State Univ, Fullerton	10	14	17	17	12	13
California State Univ, Hayward	75	51	42	22	35	44
California State Univ, Long Beach	53	42	55	54	50	37
California State Univ, Los Angeles	80	80	75	28	28	19
California State Univ, Northridge	28	39	40	41	28	39
California State Univ, Sacramento	28	28	31	25	30	31
California State Univ, San Bernardino	28	26	17	12	14	17
California State Univ, Stanislaus	10	9	2	9	0	6
Chapman College	55	28	26	27	26	13
Christ College Irvine	0	0	0	1	0	0
Claremont McKenna College	7	7	1	3	6	8
Cleveland Chiropractic College	0	0	0	0	0	2
Cogswell College	0	2	0	0	0	0
Coleman College	0	1	0	0	3	3
College of Notre Dame	1	5	2	2	2	1
Dominican College of San Rafael	0	0	1	0	0	0
Fresno Pacific College	0	0	0	0	0	1
Golden Gate University	2	0	1	1	2	0
Harvey Mudd College	0	1	1	1	1	1
Heald Business College - Hayward	0	0	0	0	12	10
Heald Institute of Technol-San Francisco	3	0	0	0	0	0
Holy Names College	4	1	1	1	7	3

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Humboldt State University	6	2	5	0	2	4
Immaculate Heart College	3	4	0	0	0	0
John F. Kennedy University	0	0	1	1	0	0
Lincoln University	0	2	0	0	0	0
Loma Linda University	10	9	11	15	12	9
Lone Mountain College	5	0	0	0	0	0
Los Angeles College of Chiropractic	0	0	0	0	0	1
Loyola Marymount University	15	25	17	8	14	13
Menlo College	0	0	0	0	0	2
Mills College	21	8	9	16	5	3
Monterey Institute of Internatl Studies	0	2	0	0	0	0
Mount Saint Mary's College	2	1	0	4	3	2
National University	0	0	0	14	18	29
Naval Postgraduate School	2	0	0	0	0	0
Northrop University	0	2	0	2	1	3
Occidental College	18	12	10	6	5	3
Pacific Christian College	0	11	2	0	0	1
Pacific Oaks College	0	0	0	0	2	2
Pacific Union College	3	2	4	0	1	2
Pepperdine University	28	17	6	8	3	3
Pitzer College	10	9	6	9	4	10
Point Loma Nazarene College	1	0	0	2	0	3
Pomona College	19	13	5	3	7	5
Saint Mary's College of California	5	10	7	5	2	4
San Diego State University	29	26	27	21	21	14
San Francisco State University	82	83	76	41	38	55
San Jose State University	46	46	44	28	32	30
Santa Clara University	4	2	5	9	4	3
Scripps College	1	2	2	2	4	0
Simpson College	1	0	0	0	1	0
Sonoma State University	15	9	6	7	7	8
Southern California College	0	1	0	1	1	2
Stanford University	79	57	54	64	89	86
The Master's College	0	0	1	0	0	0
United States International University	6	4	3	1	3	1
University of California-Berkeley	101	99	65	72	93	143
University of California-Davis	41	32	17	40	52	61
University of California-Irvine	20	23	21	32	24	33
University of California-Los Angeles	154	139	116	132	155	166
University of California-Riverside	38	28	15	24	23	19
University of California-San Diego	0	0	23	32	26	44
University of California-Santa Barbara	18	16	19	18	15	32
University of California-Santa Cruz	0	0	16	21	17	22
University of La Verne	10	11	6	3	5	5
University of Redlands	10	3	5	7	7	4
University of San Diego	3	3	4	2	0	1
University of San Francisco	13	42	33	54	33	48
University of Southern California	53	61	43	0	204	45
University of the Pacific	4	14	10	11	5	5
West Coast University	0	0	8	0	2	0
Western States College of Engineering	4	2	0	0	0	0
Westmont College	2	2	0	0	1	0
Whittier College	13	6	3	0	0	5
Woodbury University	0	0	0	1	2	1

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Colorado						
Adams State College	5	1	1	4	0	3
Colorado College	1	3	3	4	2	1
Colorado School of Mines	2	1	0	5	2	0
Colorado State University	3	4	4	0	12	9
Colorado Women's College	1	1	0	0	0	0
Fort Lewis College	0	1	0	0	2	0
Loretto Heights College	2	1	0	0	0	0
Mesa College	0	0	0	0	1	1
Metropolitan State College	30	31	20	14	17	8
Regis College	2	4	3	3	2	6
University of Colorado	38	32	37	18	29	36
University of Denver	6	5	6	1	4	1
University of Northern Colorado	10	6	7	4	5	5
University of Southern Colorado	7	10	22	1	4	5
US Air Force Academy	20	27	32	22	56	24
Western State College of Colorado	2	1	0	0	0	0
Connecticut						
Albertus Magnus College	5	1	3	2	0	1
Annhurst College	2	1	0	0	0	0
Bridgeport Engineering Institute	1	2	0	2	3	0
Central Connecticut State University	15	16	9	12	9	2
Connecticut College	5	8	4	3	6	16
Eastern Connecticut State University	11	10	6	2	7	4
Fairfield University	8	2	8	7	5	2
Quinnipiac College	4	1	3	2	2	5
Sacred Heart University	7	0	1	4	7	3
Saint Joseph College	1	2	2	0	1	2
Southern Connecticut State University	9	11	7	9	21	10
Trinity College	4	7	4	4	7	6
University of Bridgeport	0	5	2	1	3	4
University of Connecticut	18	19	24	21	16	28
University of Hartford	15	8	8	10	7	6
University of New Haven	6	7	3	4	9	8
US Coast Guard Academy	2	2	1	1	1	0
Wesleyan University	23	17	16	31	20	23
Western Connecticut State University	3	0	3	3	0	3
Yale University	38	40	37	55	40	50
Delaware						
Delaware State College (H)	45	30	37	24	27	25
Goldey Beacom College	0	0	0	0	0	2
University of Delaware	22	30	37	35	50	53
Wesley College	0	0	0	0	0	1
Wilmington College	6	11	6	0	8	9
District of Columbia						
American University	50	61	47	14	25	24

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Catholic University of America	11	9	2	8	9	7
Gallaudet University	3	0	4	3	3	0
George Washington University	34	30	38	40	18	20
Georgetown University	29	20	22	40	40	57
Howard University (H)	289	339	282	317	355	371
Mount Vernon College	2	0	0	1	1	3
Southeastern University	0	0	3	0	13	3
Strayer College	1	3	2	9	17	9
Trinity College	4	14	8	8	6	5
University of the District of Columbia (H)	174	118	217	83	192	163
Washington International College	0	0	2	0	0	0
Florida						
Barry University	3	0	0	2	6	7
Bethune Cookman College (H)	73	110	68	46	45	41
College of Boca Raton	0	0	0	1	0	0
Eckerd College	10	6	4	7	7	2
Edward Waters College (H)	36	30	38	11	14	14
Embry-Riddle Aeronautical University	3	8	98	5	10	7
Flagler College	1	2	1	0	0	0
Florida Agricultural and Mechanical Univ (H)	159	161	191	131	135	146
Florida Atlantic University	10	9	14	5	8	18
Florida Insitute of Technology	5	1	3	4	4	5
Florida International University	29	29	24	23	26	19
Florida Memorial College (H)	32	29	35	14	14	0
Florida Southern College	4	3	7	1	3	2
Florida State University	42	40	37	63	44	49
Fort Lauderdale College	0	0	0	2	0	0
Jacksonville University	9	2	4	9	13	7
Jones College-All Campuses	5	4	1	1	1	3
Miami Christian College	0	0	1	0	0	1
Nova University	1	1	3	1	0	2
Palm Beach Atlantic College	1	0	5	3	3	1
Rollins College	6	6	12	8	7	7
Saint Leo College	7	32	7	23	12	5
Saint Thomas University	1	5	32	4	6	11
Southeastern College Assemblies of God	0	0	0	0	1	0
Stetson University	0	0	3	0	0	1
Tampa College	0	0	0	6	3	3
University of Central Florida	16	18	13	11	9	14
University of Florida	33	41	64	63	96	114
University of Miami	23	26	53	20	28	41
University of North Florida	14	11	16	14	8	6
University of South Florida	66	59	49	60	49	43
University of Tampa	13	5	6	5	4	7
University of West Florida	13	11	11	11	7	5
Warner Southern College	0	0	0	1	0	0
Georgia						
Agnes Scott College	2	2	1	4	2	5
Albany State College (H)	55	65	49	36	42	45
Armstrong State College	3	2	5	5	4	2

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Augusta College	9	6	11	8	14	22
Berry College	9	1	1	0	2	0
Brenau College	1	1	2	2	1	1
Clark College (H)	70	68	60	57	61	61
Columbus College	6	4	12	5	9	10
Covenant College	1	0	0	0	1	0
Devry Institute of Technology	0	0	3	31	66	61
Emory University	12	11	13	40	29	51
Fort Valley State College (H)	59	57	58	49	51	41
Georgia College	14	16	17	11	19	12
Georgia Institute of Technology-All Cam	19	52	79	62	64	72
Georgia Southern College	6	5	9	14	15	26
Georgia Southwestern College	10	6	17	15	19	16
Georgia State University	28	49	67	49	69	53
Kennesaw College	0	0	0	0	2	5
La Grange College	3	8	5	0	2	1
Mercer University-All Campuses	30	40	30	26	13	20
Morehouse College (H)	86	109	83	110	106	85
Morris Brown College (H)	47	47	49	23	21	21
North Georgia College	1	0	2	2	2	3
Oglethorpe University	0	3	4	1	2	1
Paine College (H)	49	28	30	24	16	27
Piedmont College	1	2	2	1	1	0
Savannah State College (H)	77	53	76	43	32	40
Shorter College	0	3	4	0	0	0
Spelman College (H)	133	186	146	173	197	197
Tift College of Mercer University	2	1	8	4	0	0
University of Georgia	29	28	23	56	53	52
Valdosta State College	13	22	17	18	33	33
Wesleyan College	0	5	0	2	1	1
West Georgia College	16	12	18	7	16	18
Hawaii						
Chaminade University of Honolulu	15	2	5	5	2	11
Hawaii Loa College	0	0	0	0	0	1
Hawaii Pacific College	0	0	0	2	2	5
University of Hawaii-Hilo	2	0	0	2	1	0
University of Hawaii-Manoa	6	3	5	4	4	8
University of Hawaii-West Oahu College	0	0	0	0	0	1
Idaho						
Boise State University	1	1	1	1	2	1
College of Idaho	0	1	0	0	1	0
Idaho State University	3	0	0	1	1	1
Lewis-Clark State College	1	0	0	0	0	0
University of Idaho	0	2	2	0	2	1
Illinois						
Aero-Space Institute	1	0	0	0	0	0
Augustana Collge	9	7	6	5	7	2
Aurora University	3	1	6	1	4	6

Bachelor's degrees awarded to blacks in science and engineering,
by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Barat College	5	3	1	0	0	1
Blackburn College	3	8	6	0	1	3
Bradley University	23	19	22	22	9	11
Chicago State University	115	92	88	113	105	87
Chicago Technical College	8	0	0	0	0	0
College of Saint Francis	3	3	0	1	0	1
Concordia College	1	1	1	2	1	1
De Paul University	39	26	29	25	29	32
Devry Institute of	0	0	0	0	9	50
Devry Institute of Technology-Chicago	7	22	13	48	50	0
East-West University	0	0	0	0	3	0
Eastern Illinois University	30	19	17	17	14	33
Elmhurst College	14	14	4	3	1	2
Eureka College	2	5	5	4	5	0
George Williams College	2	6	5	6	0	0
Governors State University	3	12	7	4	5	4
Greenville College	2	2	2	4	0	1
Illinois Benedictine College	3	3	2	1	1	3
Illinois College	0	0	1	0	1	1
Illinois Institute of Technology	18	25	36	28	34	26
Illinois State University	53	40	58	44	41	48
Illinois Wesleyan University	5	5	7	7	7	1
Judson College	0	0	0	3	1	2
Kendall College	0	0	0	1	1	1
Knox College	5	3	3	5	8	3
Lake Forest College	15	19	15	3	6	10
Lewis University	3	6	6	5	3	3
Loyola University of Chicago	34	30	43	49	39	43
MacMurrary College	8	6	1	2	1	1
McKendree College	9	5	4	1	3	5
Millikin University	4	7	9	3	2	4
Monmouth College	2	3	1	0	0	0
Mundelein College	4	6	12	4	5	4
National College of Chiropractic	0	1	1	2	2	0
National College of Education	2	1	1	23	34	68
North Central College	1	1	0	1	2	8
North Park College & Theological Sem	2	1	0	3	2	3
Northeastern Illinois University	25	31	43	10	20	19
Northern Illinois University	31	32	36	27	38	39
Northwestern University	79	71	77	75	81	89
Olivet Nazarene College	1	0	1	2	4	3
Principia College	2	1	1	0	3	1
Quincy College	0	0	2	2	2	1
Rockford College	3	4	4	1	3	1
Roosevelt University	96	66	50	53	55	55
Rosary College	3	6	2	3	6	0
Saint Xavier College	6	3	3	2	2	4
Sangamon State University	6	5	4	2	1	1
Southern Illinois Univ-Edwardsville	36	18	25	12	26	18
Southern Illinois University-Carbondale	37	31	33	25	20	30
Trinity Christian College	0	5	1	0	3	5
Trinity College	1	3	1	1	0	2
University of Chicago	22	6	14	16	14	11
University of Illinois-Chicago	112	105	89	0	53	79

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
University of Illinois-Urbana	59	47	40	80	70	85
Western Illinois University	11	8	18	17	14	17
Wheaton College	1	1	2	2	0	2
William M. Scholl College of Podiatr Med	0	2	1	0	0	2
Indiana						
Anderson University	2	1	2	2	3	4
Ball State University	16	16	21	7	15	7
Bethel College	2	1	0	0	0	0
Butler University	0	2	0	1	4	0
Calumet College of Saint Joseph	11	8	1	3	4	3
Concordia Theological Seminary	1	0	0	0	0	0
De Pauw University	4	3	2	3	6	2
Earlham College	4	7	4	7	12	7
Fort Wayne Bible College	0	0	0	0	1	0
Franklin College of Indiana	0	0	0	0	0	1
Goshen College	1	2	2	1	0	2
Grace College	0	0	0	1	1	0
Hanover College	0	0	1	2	1	1
Indiana Institute of Technology	2	1	1	3	2	0
Indiana State University-All Campuses	22	30	30	29	20	27
Indiana University-All Campuses	74	74	59	57	65	41
ITT Technical Institute-Indianapolis	0	0	0	0	0	8
Manchester College	1	1	0	3	1	0
Marian College	0	2	2	1	2	1
Marion College	1	0	0	2	2	0
Martin Center College	0	0	1	3	0	0
Purdue University-All Campuses	52	48	57	65	70	74
Rose-Hulman Institute of Technology	1	0	0	1	3	2
Saint Francis College	2	1	0	0	0	1
Saint Joseph's College	4	3	1	3	1	1
Saint Mary's College	2	1	1	1	0	0
Saint Mary-of-the-Woods College	1	2	1	1	0	1
Saint Meinrad College	1	1	1	0	0	0
Taylor University	2	1	0	0	1	2
Tri-State University	0	2	1	2	4	0
University of Evansville	3	3	2	6	7	1
University of Indianapolis	3	1	1	2	0	0
University of Notre Dame	11	15	20	13	17	12
Valparaiso University	6	4	2	9	2	3
Wabash College	7	2	0	3	2	6
Iowa						
Briar Cliff College	1	0	3	0	0	0
Buena Vista College	1	1	0	0	0	0
Central University of Iowa	4	2	5	0	3	3
Clarke College	0	0	0	1	0	1
Coe College	1	4	1	0	6	2
Cornell College	3	7	3	3	4	3
Divine Word College	0	1	2	0	0	0
Dordt College	0	0	0	1	0	0
Drake University	17	10	8	1	3	6

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Graceland College	0	1	0	1	0	0
Grinnell College	9	9	7	2	11	2
Iowa State University of Science & Tech	4	12	8	11	15	16
Iowa Wesleyan College	0	1	2	0	0	0
Loras College	0	1	1	8	0	3
Luther College	7	10	4	1	0	2
Marycrest College	0	0	1	2	1	0
Morningside College	0	0	0	1	1	0
Mount Mercy College	0	0	2	0	0	1
Mount Saint Clare College	0	0	0	0	0	1
Northwestern College	0	0	1	0	0	0
Saint Ambrose College	1	0	3	2	2	1
Simpson College	5	5	1	0	1	0
University of Dubuque-College of Lib Art	2	3	1	1	3	1
University of Iowa	3	9	10	10	11	16
University of Northern Iowa	3	2	2	0	3	2
Upper Iowa University	1	2	0	0	1	1
Wartburg College	3	0	2	0	1	1
Westmar College	2	2	0	1	1	0
William Penn College	5	1	9	1	2	0
Kansas						
Baker University	2	6	7	1	1	2
Benedictine College	2	1	0	1	1	2
Bethany College	2	3	1	0	1	0
Bethel College	4	3	0	0	0	1
Emporia State University	4	5	3	4	2	3
Fort Hays State University	3	2	3	8	1	0
Friends University	1	0	1	2	0	1
Kansas Newman College	3	4	1	1	1	1
Kansas State University of Ag & Appl Sci	6	6	18	18	18	18
Kansas Wesleyan	2	0	0	2	1	0
Marymount College of Kansas	4	6	2	0	3	0
McPherson College	0	1	1	0	1	0
Mid-America Nazarene College	0	0	1	0	0	2
Ottawa University	4	3	2	0	1	4
Pittsburgh State University	9	15	22	3	0	1
Saint Mary College	2	0	0	1	2	1
Saint Mary of the Plains College	2	1	0	0	0	1
Southwestern College	2	1	2	1	1	1
Sterling College	4	2	1	2	1	1
Tabor College	0	0	0	0	2	0
University of Kansas	22	7	29	27	32	23
Washburn University of Topeka	10	3	5	4	8	15
Wichita State University	6	5	8	10	5	12
Kentucky						
Bellarmine College	1	2	1	0	1	3
Berea College	4	9	2	4	3	3
Brescia College	2	2	0	0	0	0
Campbellsville College	3	0	1	0	4	0
Centre College of Kentucky	4	4	1	2	1	2

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Cumberland College	0	0	1	1	1	3
Eastern Kentucky University	18	11	14	14	12	11
Georgetown College	1	0	0	0	1	1
Kentucky State University (H)	42	23	21	18	22	24
Kentucky Wesleyan College	4	0	1	1	0	1
Morehead State University	2	4	8	5	3	1
Murray State University	4	5	3	1	5	3
Northern Kentucky University	1	2	0	4	2	2
Spalding University	2	1	1	0	2	2
Thomas More College	1	0	3	1	0	0
Transylvania University	2	1	3	1	1	1
Union College	0	1	0	0	1	1
University of Kentucky	8	10	18	14	18	10
University of Louisville	26	19	27	20	35	32
Western Kentucky University	13	12	19	9	15	18
Louisiana						
Centenary College of Louisiana	1	0	1	0	1	2
Dillard University (H)	27	54	44	53	52	42
Grambling State University (H)	128	154	118	148	114	132
Louisiana College	0	1	3	0	3	0
Louisiana State University-All Campuses	24	24	15	21	42	36
Louisiana Tech University	18	14	23	20	19	19
Loyola University in New Orleans	8	12	10	15	20	15
McNeese State University	6	4	6	15	16	8
Nicholls State University	11	15	15	2	5	6
Northeast Louisiana University	12	9	19	25	11	9
Northwestern State Univ of Louisiana	18	4	11	19	14	12
Our Lady of Holy Cross College	0	1	0	3	1	4
Saint Joseph Seminary College	0	0	1	1	0	0
Saint Mary's Dominican College	0	1	5	0	0	0
Southeastern Louisiana University	7	5	11	6	10	3
Southern University and A & M College (H)	313	300	280	231	296	280
Tulane University of Louisiana	36	21	27	20	24	20
University of New Orleans	23	21	26	28	34	47
University of Southwestern Louisiana	12	36	33	22	26	19
Xavier University of Louisiana (H)	61	49	63	88	115	112
Maine						
Bates College	5	1	1	6	5	3
Bowdoin College	11	9	8	5	3	3
Colby College	0	1	1	6	0	5
Maine Maritime Academy	1	0	0	1	1	2
Nasson College	0	2	0	0	0	0
Ricker College	1	0	0	0	0	0
Saint Joseph's College	0	0	1	0	20	0
University of Maine-Orono	0	1	0	1	0	1
University of Maine-Presque Isle	0	1	1	0	0	1
University of New England	1	0	0	0	0	2
University of Southern Maine	0	1	0	0	0	0
Maryland						

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Bowie State College (H)	32	34	35	30	27	58
Capitol College	3	3	4	0	0	0
College of Notre Dame of Maryland	0	3	5	2	1	4
Columbia Union College	4	0	0	3	11	11
Coppin State College (H)	64	30	51	40	52	81
Frostburg State University	13	12	14	11	13	13
Goucher College	4	8	11	4	8	4
Hood College	1	3	1	2	1	4
Johns Hopkins University	12	20	12	14	22	9
Loyola College	8	9	4	11	14	6
Morgan State University (H)	180	143	146	108	102	107
Mount Saint Mary's College	1	0	0	3	2	3
Saint Mary's College of Maryland	2	8	8	9	7	11
Salisbury State College	6	6	5	13	7	7
Towson State University	28	38	32	28	27	53
University of Baltimore	9	10	12	12	6	11
University of Maryland-Baltimore County	52	73	56	47	72	86
University of Maryland-College Park	101	77	109	115	135	154
University of Maryland-Eastern Shore (H)	42	25	21	28	32	18
US Naval Academy	51	17	35	34	34	57
Villa Julie College	0	0	0	0	1	1
Washington College	2	1	0	1	1	0
Western Maryland College	7	1	6	0	5	1
Massachusetts						
American International College	7	5	3	6	4	3
Amherst College	19	14	17	16	22	11
Anna Maria College	0	0	0	0	0	1
Assumption College	1	1	3	6	1	2
Atlantic Union College	1	5	10	5	3	6
Bentley College	0	2	0	0	0	0
Boston College	28	22	22	7	8	22
Boston State College	23	26	27	0	0	0
Boston University	30	20	43	24	59	40
Bradford College	1	0	0	0	0	0
Brandeis University	31	28	22	9	9	8
Bridgewater State College	3	1	1	2	1	4
Central New England College	2	0	0	0	1	1
Clark University	12	10	15	7	9	13
College of Our Lady of the Elms	1	1	1	0	0	1
College of the Holy Cross	17	17	6	29	5	8
Curry College	5	1	0	2	0	0
Eastern Nazarene College	0	0	1	4	3	0
Emerson College	1	0	0	0	0	0
Emmanuel College	4	4	5	4	6	1
Fitchburg State College	1	1	1	5	4	4
Framingham State College	0	1	0	2	7	3
Gordon College	2	1	3	2	2	1
Hampshire College	0	3	2	0	0	0
Harvard University	82	97	70	73	83	73
Lesley College	0	0	0	1	0	0
Massachusetts Institute of Technology	14	21	26	48	40	29

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Massachusetts Maritime Academy	3	1	0	0	0	0
Merrimack College	2	3	0	3	1	0
Mount Holyoke College	20	20	15	11	20	17
North Adams State College	2	2	0	1	0	0
Northeastern University	31	14	58	49	31	24
Pine Manor College	0	0	2	0	0	0
Radcliffe College	0	46	0	34	46	41
Regis College	1	4	1	1	0	0
Salem State College	6	2	0	4	0	1
Simmons College	11	7	7	5	5	0
Smith College	28	20	34	16	11	19
Southeastern Massachusetts University	9	6	7	4	5	6
Springfield College	14	6	4	4	2	2
Stonehill College	3	1	0	1	1	2
Suffolk University	2	3	6	0	3	6
Tufts University	45	52	68	37	29	20
University of Lowell	9	4	10	0	6	1
University of Massachusetts-Amherst	21	14	37	10	17	24
University of Massachusetts-Boston	42	18	35	10	16	31
Wellesley College	26	23	29	13	15	20
Wentworth Institute of Technology	0	1	0	3	6	3
Western New England College	9	7	8	1	0	5
Westfield State College	5	5	9	8	7	1
Wheaton College	4	5	2	14	5	2
Williams College	16	29	20	14	15	13
Worcester Polytechnic Institute	2	2	2	2	1	1
Worcester State College	3	4	2	0	5	0
Michigan						
Adrian College	2	0	2	0	2	0
Albion College	2	6	1	1	0	2
Alma College	5	1	0	1	0	0
Andrews University	7	3	7	12	23	1
Aquinas College	3	7	4	1	1	0
Baker College	0	0	0	0	0	1
Calvin College	2	0	0	1	1	1
Central Michigan University	12	13	3	4	10	10
Cleary College	0	0	0	0	0	2
Concordia College	0	0	0	0	0	1
Detroit College of Business	1	4	2	0	0	8
Detroit Institute of Technology	23	25	6	0	0	0
Eastern Michigan University	32	43	38	42	31	38
Ferris State College	2	1	6	5	4	4
GMI Engineering and Management Institute	16	21	17	16	12	22
Grand Rapids Baptist College and Sem	0	0	1	2	1	2
Grand Valley State Colleges	18	7	8	7	3	6
Hillsdale College	3	0	1	0	0	3
Hope College	2	3	2	0	0	1
John Wesley College	0	6	0	0	0	0
Jordan College	0	0	0	1	0	0
Kalamazoo College	9	1	2	3	3	3
Lawrence Institute of Technology	4	4	7	13	23	9
Madonna College	8	4	5	0	8	6

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Marygrove College	7	4	16	23	23	29
Mercy College of Detroit	25	20	14	6	9	26
Michigan State University	129	96	118	105	115	129
Michigan Technological University	2	2	1	1	3	1
Nazareth College	1	0	0	0	0	1
Northern Michigan University	2	2	1	2	1	3
Oakland University	30	33	24	12	15	12
Olivet College	3	5	1	2	1	4
Saginaw Valley State College	6	9	0	3	4	7
Saint Mary's College	0	0	0	1	0	0
Shaw College at Detroit	29	27	27	12	0	0
Siena Heights College	1	6	4	0	1	1
Spring Arbor College	1	1	27	17	12	4
University of Detroit	80	42	42	25	30	19
University of Michigan	130	112	122	98	105	123
Walsh College of Accountancy & Bus Admin	0	0	0	0	1	0
Wayne State University	210	173	140	124	112	78
Western Michigan University	44	35	36	35	18	20
William Tyndale College	0	0	0	1	1	11
Minnesota						
Augsburg College	4	3	2	1	1	3
Bemidji State University	0	1	0	0	0	0
Bethel College and Seminary-All Campuses	2	1	0	0	1	0
Carleton College	17	11	6	10	8	7
College of Saint Benedict	0	0	0	1	1	1
College of Saint Catherine	0	0	0	0	0	1
College of Saint Scholastica	0	1	0	1	0	0
College of Saint Teresa	0	1	1	0	0	0
College of Saint Thomas	0	1	0	1	1	1
Concordia College-Moorhead	7	3	0	3	0	0
Concordia College-Saint Paul	1	2	1	1	0	2
Gustavus Adolphus College	8	3	0	12	2	2
Hamline University	1	0	2	3	4	1
Macalester College	15	12	7	2	7	5
Mankato State University	4	2	2	3	2	3
Moorhead State University	1	0	0	0	2	0
Saint Cloud State University	0	1	5	8	1	0
Saint John's University	2	0	0	0	0	1
Saint Mary's College	0	2	0	0	0	2
Saint Olaf College	9	1	2	1	3	0
University of Minnesota	22	32	13	24	28	28
Winona State University	0	1	1	0	0	1
Mississippi						
Alcorn State University	98	104	83	93	84	72
Belhaven College	0	0	2	0	1	2
Blue Mountain College	0	0	0	0	0	2
Delta State University	7	10	11	15	17	11
Jackson State University (H)	200	159	149	135	178	150
Millsaps College	6	12	1	3	3	7
Mississippi College	3	2	0	4	11	8

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Mississippi Industrial College	5	12	2	0	0	0
Mississippi State University	36	40	38	47	69	42
Mississippi University for Women	6	7	6	1	8	3
Mississippi Valley State University (H)	117	112	105	61	92	59
Rust College (H)	50	24	15	25	32	18
Tougaloo College (H)	101	94	82	60	46	55
University of Mississippi	10	26	25	24	13	7
University of Southern Mississippi	19	31	43	39	44	61
William Carey College	3	4	8	5	3	3
Missouri						
Avila College	3	4	4	0	2	3
Central Methodist College	0	0	0	1	0	2
Central Missouri State University	9	7	9	4	6	6
Columbia College	2	12	15	17	5	4
Culver-Stockton College	4	2	1	0	1	5
DeVry Institute of Technology	7	3	3	19	10	8
Drury College	5	1	2	1	1	1
Evangel College	1	2	1	0	2	8
Fontbonne College	0	1	1	0	1	5
Lincoln University (H)	32	22	26	21	16	10
Lindenwood College	3	0	2	2	0	1
Maryville College	3	2	4	0	4	5
Missouri Baptist College	1	1	2	0	2	4
Missouri Southern State College	3	1	1	0	0	1
Missouri Valley College	2	5	0	5	1	3
Missouri Western State College	4	4	6	2	0	1
Northeast Missouri State University	12	6	11	2	3	2
Northwest Missouri State University	4	0	2	1	9	0
Park College	39	42	22	31	21	50
Rockhurst College	5	4	3	6	5	5
Saint Louis University	30	35	24	18	11	16
School of the Ozarks	0	1	2	1	0	0
Southeast Missouri State University	7	4	7	3	5	3
Southwest Baptist University	3	0	1	2	2	2
Southwest Missouri State University	0	7	4	2	3	3
Stephens College	4	2	2	2	1	2
Tarkio College	3	3	4	3	0	2
University of Missouri-Columbia	13	15	20	32	19	22
University of Missouri-Kansas City	24	22	19	19	17	15
University of Missouri-Rolla	8	10	20	27	16	18
University of Missouri-St Louis	19	13	12	14	13	21
Washington University	22	40	44	2	39	31
Webster University	13	13	6	10	4	8
Westminster College	0	1	0	3	0	3
William Jewell College	0	2	0	2	5	1
William Woods College	2	0	0	0	0	1
Montana						
Carroll College	0	0	0	0	1	0
College of Great Falls	0	0	4	2	1	0
Montana State University	0	1	0	2	2	2

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Rocky Mountain College	2	1	0	0	0	0
University of Montana	2	1	1	0	2	0
Western Montana College	1	0	1	0	0	0
Nebraska						
Bellevue College	1	10	5	3	5	3
College of Saint Mary	0	0	0	0	1	0
Concordia Teachers College	0	0	0	2	0	0
Creighton University	7	10	6	8	7	4
Dana College	2	0	1	0	0	0
Doane College	3	1	1	0	0	0
Kearney State College	2	1	0	0	0	1
Midland Lutheran College	0	0	0	0	1	4
Nebraska Wesleyan University	1	0	1	0	0	0
Peru State College	1	0	0	0	1	0
Union College	0	0	0	2	0	0
University of Nebraska-Lincoln	13	14	8	7	3	6
University of Nebraska-Omaha	11	16	18	6	14	6
Wayne State College	0	1	0	0	0	1
Nevada						
University of Nevada-Las Vegas	4	3	7	4	3	5
University of Nevada-Reno	0	1	7	6	7	6
New Hampshire						
Daniel Webster College	0	0	0	0	2	0
Dartmouth College	47	52	49	41	35	36
Franklin Pierce College	0	0	3	3	3	6
Hawthorne College	2	3	0	0	0	0
New England College	0	0	0	1	0	0
New Hampshire College	0	0	0	0	2	0
Plymouth State College	2	0	0	0	0	1
Saint Anselm College	2	0	0	0	1	0
University of New Hampshire	1	4	1	2	2	2
New Jersey						
Bloomfield College	12	16	31	23	20	34
Caldwell College	4	4	3	5	0	2
Centenary College	0	0	0	2	2	2
College of Saint Elizabeth	3	0	4	3	0	2
Drew University	8	5	9	10	9	10
Fairleigh-Dickinson University	36	24	28	16	19	13
Felician College	0	0	1	0	0	0
Georgian Court College	4	3	3	1	3	1
Glassboro State College	59	30	18	18	13	11
Jersey City State College	37	20	41	28	26	16
Kean College of New Jersey	27	38	50	48	34	15
Monmouth College	4	2	5	4	6	4
Montclair State College	28	14	11	22	20	31
New Jersey Institute of Technology	29	47	23	29	28	28

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Princeton University	58	49	61	52	45	44
Ramapo College of New Jersey	24	9	10	3	6	8
Rider College	4	3	5	5	1	3
Rutgers State University of New Jersey	343	280	311	225	230	234
Saint Peter's College	6	10	11	8	5	4
Seton Hall University	30	16	14	22	15	10
Stevens Institute of Technology	0	6	6	5	8	8
Stockton State College	28	15	9	15	23	15
Thomas A. Edison State College	5	8	12	3	2	5
Trenton State College	28	28	22	16	10	17
Upsala College	13	18	18	2	3	17
William Paterson College	8	12	9	14	14	16
New Mexico						
College of Santa Fe	0	1	1	1	0	0
Eastern New Mexico University-All Cam	6	8	3	3	7	5
New Mexico Highlands University	3	0	1	2	1	2
New Mexico Institute of Mining & Technol	4	0	1	0	1	0
New Mexico State University-All Campuses	11	8	6	3	9	7
University of Albuquerque	7	0	3	8	0	0
University of New Mexico	7	5	4	15	10	5
Western New Mexico University	0	1	1	0	1	1
New York						
Adelphi University	43	25	22	25	17	20
Alfred University-Main Campus	3	2	0	4	3	2
Bard College	0	2	5	1	2	2
Barnard College	15	13	18	15	21	4
Briarcliff College	1	0	0	0	0	0
Canisius College	19	7	10	16	18	22
Cathedral College Immaculate Conception	0	2	0	1	0	0
Clarkson University	0	2	0	0	0	0
Colgate University	5	6	12	7	8	8
College of Insurance	0	0	0	1	2	0
College of Mount Saint Vincent	3	9	7	4	2	0
College of New Rochelle	4	6	4	1	3	3
College of Saint Rose	8	3	2	2	1	2
Columbia University	46	27	26	37	48	48
Concordia College	0	1	1	0	2	4
Cooper Union	1	1	1	1	4	0
Cornell University	61	64	37	75	62	77
CUNY-Bernard M. Baruch College	40	38	36	63	0	0
CUNY-Brooklyn College	143	272	195	98	0	0
CUNY-City College	278	303	206	194	0	0
CUNY-College of Staten Island	116	53	34	41	0	0
CUNY-Graduate School and University Cntr	36	0	0	0	0	0
CUNY-Herbert H. Lehman College	148	83	75	109	0	0
CUNY-Hunter College	109	118	95	110	0	0
CUNY-John Jay College of Criminal Just	53	31	37	48	0	0
CUNY-Medgar Evers College	31	20	7	9	0	0
CUNY-Queens College	101	121	64	64	0	0
CUNY-York College of the CUNY	87	92	95	44	0	0

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
D'Youville College	2	2	6	2	2	1
Daemen College	6	6	3	5	3	4
Dominican College of Blauvelt	0	1	0	0	0	2
Dowling College	5	3	8	2	1	2
Eisenhower College	3	2	0	0	0	0
Elmira College	6	4	1	9	2	4
Fordham University	107	92	118	66	54	39
Hamilton College	4	5	0	6	6	5
Hartwick College	4	2	1	1	1	0
Hobart and William Smith Colleges	4	10	3	9	13	7
Hofstra University	19	6	19	33	26	33
Houghton College	0	0	0	4	1	1
Iona College	6	5	4	9	13	13
Ithaca College	7	6	8	4	6	2
Keuka College	0	2	0	0	3	5
King's College	2	3	2	2	1	5
Kirkland College	5	0	0	0	0	0
Ladycliff College	0	2	0	0	0	0
Le Moyne College	3	2	4	4	3	5
Long Island University-All Campuses	53	53	60	80	69	52
Manhattan College	6	8	4	11	15	7
Manhattanville College	17	9	2	10	4	2
Marist College	7	2	2	6	7	1
Marymount College	10	9	8	3	3	7
Marymount Manhattan College	21	30	26	13	13	8
Medaille College	0	5	7	7	2	3
Mercy College	20	85	91	76	57	52
Molloy College	4	5	4	2	2	4
Mount Saint Mary College	1	2	4	5	4	2
Nazareth College of Rochester	4	3	2	2	4	1
New School for Social Research	0	0	1	0	0	0
New York Institute of Technology	33	12	59	32	22	26
New York University	27	57	32	44	0	0
Niagara University	6	0	7	3	3	3
Nyack College	1	0	1	3	2	1
Pace University-All Campuses	20	22	48	55	67	57
Polytechnic University	18	28	30	30	52	52
Pratt Institute	25	32	33	56	38	34
Rensselaer Polytechnic Institute	20	7	22	11	18	22
Roberts Wesleyan College	0	0	1	0	0	1
Rochester Institute of Technology	3	3	11	7	7	8
Russell Sage College	6	1	4	2	0	1
Saint Bonaventure University	1	0	0	2	1	4
Saint Francis College	5	8	9	16	7	11
Saint John Fisher College	2	0	2	0	1	4
Saint John's University	12	17	30	24	30	48
Saint Joseph's College-All Campuses	1	5	4	0	6	4
Saint Lawrence University	4	4	18	6	4	10
Saint Thomas Aquinas College	1	2	2	1	1	2
Siena College	3	5	2	4	3	2
Skidmore College	0	2	2	3	1	5
SUNY-Albany	32	34	22	27	26	39
SUNY-Binghamton	12	16	14	19	33	38
SUNY-Buffalo	59	27	37	37	27	37

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
SUNY-College at Brockport	17	11	12	15	16	21
SUNY-College at Buffalo	15	20	24	24	23	11
SUNY-College at Cortland	9	1	6	6	2	5
SUNY-College at Fredonia	6	3	4	6	7	8
SUNY-College at Geneseo	2	4	2	1	2	2
SUNY-College at New Paltz	35	31	37	33	23	33
SUNY-College at Old Westbury	37	38	22	40	27	49
SUNY-College at Oneonta	8	10	17	8	6	6
SUNY-College at Oswego	8	14	3	5	4	5
SUNY-College at Plattsburgh	8	1	1	5	2	1
SUNY-College at Potsdam	1	10	8	2	4	4
SUNY-College at Purchase	3	2	4	11	3	13
SUNY-College of Environ Sci & Forestry	0	2	0	2	2	2
SUNY-College of Technology at Utica-Rome	0	2	0	2	6	4
SUNY-Empire State College	16	6	5	9	3	12
SUNY-Maritime College	1	1	4	0	3	1
SUNY-Stony Brook	32	43	60	81	75	79
Syracuse University-All Campuses	34	35	50	82	55	74
Touro College	0	0	0	29	11	11
Union College	6	7	2	6	5	9
University of New York Rgnts Ext Deg Pgm	0	0	0	0	1	0
University of Rochester	7	9	11	6	10	34
US Merchant Marine Academy	2	2	2	3	3	2
Vassar College	35	23	22	28	14	16
Wagner College	9	4	12	4	5	9
Wells College	4	2	1	1	1	3
Yeshiva University	0	1	0	0	0	0
North Carolina						
Appalachian State University	10	9	17	6	13	14
Atlantic Christian College	3	5	11	9	5	5
Barber-Scotia College (H)	28	24	12	10	13	18
Belmont Abbey College	2	1	1	1	5	4
Bennett College (H)	28	16	22	18	11	25
Campbell University	0	6	1	13	4	12
Catawba College	4	3	4	3	5	1
Davidson College	6	5	4	8	8	7
Duke University	28	33	48	48	53	40
East Carolina University	13	17	27	40	22	36
Elizabeth City State University (H)	41	90	60	69	50	47
Elon College	3	6	3	7	12	6
Fayetteville State University (H)	106	93	123	51	68	52
Gardner-Webb College	2	2	6	5	7	5
Greensboro College	3	3	10	1	7	2
Guilford College	5	11	3	0	6	5
High Point College	1	3	0	1	3	6
Johnson C. Smith University (H)	74	60	57	45	38	49
Lenoir-Rhyne College	2	1	6	0	3	6
Livingstone College (H)	28	30	24	25	29	23
Mars Hill College	0	2	1	0	2	0
Meredith College	2	1	1	0	1	1
Methodist College	3	5	6	5	10	13
Mount Olive College	0	0	0	0	0	2

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
North Carolina Agri & Tech State Univ (H)	204	170	198	156	201	207
North Carolina Central University (H)	199	161	146	137	174	193
North Carolina State University-Raleigh	25	54	68	105	106	113
North Carolina Wesleyan College	4	4	7	5	4	3
Pembroke State University	7	24	23	17	16	20
Pfeiffer College	2	0	0	2	2	5
Queens College	0	0	1	0	0	2
Sacred Heart College	1	0	1	0	0	0
Saint Andrews Presbyterian College	5	5	2	3	3	5
Saint Augustine's College (H)	64	62	83	77	76	87
Salem College	0	0	1	1	2	0
Shaw University (H)	63	52	46	51	47	63
University of North Carolina-Asheville	5	2	3	3	5	7
University of North Carolina-Chapel Hill	42	61	73	82	74	83
University of North Carolina-Charlotte	23	29	40	19	24	42
University of North Carolina-Greensboro	22	26	29	22	20	19
University of North Carolina-Wilmington	11	12	18	17	25	22
Wake Forest University	13	11	19	14	9	14
Warren Wilson College	3	2	0	2	1	1
Western Carolina University	7	4	3	8	6	10
Wingate College	0	2	7	0	0	2
Winston-Salem State University (H)	66	100	59	40	38	56
North Dakota						
Jamestown College	0	0	1	0	1	0
Mayville State University	0	0	0	0	1	0
Minot State College	0	1	1	1	6	3
North Dakota State University-All Cam	0	0	0	2	2	1
University of Mary	0	0	0	0	1	0
University of North Dakota	2	3	1	3	1	0
Ohio						
Antioch University	24	15	5	5	2	1
Ashland College	1	5	6	1	0	2
Baldwin-Wallace College	15	4	7	5	8	8
Bluffton College	3	0	1	0	0	2
Bowling Green State University-All Cam	19	17	21	7	4	9
Capital University	10	8	13	3	5	5
Case Western Reserve University	26	16	11	17	9	10
Cedarville College	2	0	0	1	0	0
Central State University (H)	47	57	75	61	75	80
Cleveland State University	32	19	25	24	41	41
College of Mount Saint Joseph	0	1	1	1	3	3
College of Wooster	13	11	5	3	9	14
Defiance College	0	1	1	3	3	3
Denison University	8	4	9	12	18	10
Dyke College	0	0	0	0	0	1
Edgecliff College	3	3	0	0	0	0
Findlay College	2	1	2	0	0	0
Franciscan University of Steubenville	4	3	0	0	1	1
Franklin University	1	1	0	0	5	6
God's Bible School and College	0	0	0	0	2	0

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Heidelberg College	2	7	2	2	0	0
Hiram College	16	8	7	4	2	2
John Carroll University	2	10	4	4	3	3
Kent State University-All Campuses	20	22	28	16	20	20
Kenyon College	1	1	0	3	1	3
Lake Erie College	0	1	3	2	0	0
Lourdes College	0	0	0	0	2	2
Malone College	2	2	5	0	1	1
Marietta College	7	0	1	0	0	1
Miami University-All Campuses	16	10	21	11	16	19
Mount Union College	5	3	3	4	4	4
Muskingum College	0	3	1	1	0	0
Notre Dame College	0	2	1	5	7	7
Oberlin College	28	23	43	16	30	21
Ohio Dominican College	3	4	6	3	1	4
Ohio Institute of Technology	1	6	8	25	29	13
Ohio Northern University	2	1	0	0	5	2
Ohio State University-All Campuses	47	38	101	61	67	70
Ohio University-All Campuses	32	45	21	20	21	32
Ohio Wesleyan University	11	6	10	3	10	10
Otterbein College	4	2	2	0	1	2
Union of Exper Colleges & Universities	3	8	2	9	4	6
University of Akron-All Campuses	14	10	13	24	12	12
University of Cincinnati-All Campuses	74	55	54	41	58	58
University of Dayton	19	23	39	17	16	21
University of Toledo	11	20	9	14	13	13
Ursuline College	3	2	0	3	3	0
Walsh College	3	0	2	0	0	0
Wilberforce University (H)	47	42	56	37	33	33
Wilmington College	6	1	7	1	3	3
Wittenberg University	8	6	11	8	18	11
Wright State University	14	20	21	21	20	20
Xavier University	8	8	5	7	6	7
Youngstown State University	25	9	6	19	20	20
Oklahoma						
American Christian College	1	0	0	0	0	0
Cameron University	10	12	17	11	13	15
Central State University	23	29	28	10	24	22
East Central University	6	1	2	9	1	3
Langston University (H)	55	21	9	27	34	31
Mid-America Bible College	1	2	0	1	0	0
Northeastern State University	16	20	8	10	16	10
Northwestern Oklahoma State University	3	0	3	0	0	0
Oklahoma Baptist University	1	2	0	0	1	0
Oklahoma Christian College	3	3	0	2	2	0
Oklahoma City University	2	3	1	1	1	1
Oklahoma Panhandle State University	0	0	2	0	1	0
Oklahoma State University	11	17	23	21	12	15
Oral Roberts University	5	4	4	7	6	6
Phillips University	5	1	0	3	1	0
Southeastern Oklahoma State University	3	6	2	2	11	6
Southwestern Oklahoma State University	5	2	3	3	2	6

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
University of Oklahoma	17	15	16	16	27	18
University of Science & Arts of Oklahoma	3	2	2	2	2	3
University of Tulsa	2	5	2	2	1	3
Oregon						
Eastern Oregon State College	0	1	0	1	0	2
George Fox College	0	1	0	0	1	0
Lewis and Clark College	1	1	1	2	1	2
Linfield College	4	1	1	0	0	1
Marylhurst College for Lifelong Learning	0	0	1	0	0	0
Oregon State University	4	2	2	10	14	5
Pacific University	1	2	2	0	1	2
Portland State University	4	11	4	7	18	9
Reed College	2	0	0	0	2	2
Southern Oregon State College	1	0	0	0	0	0
University of Oregon	11	10	3	6	4	10
University of Portland	5	3	0	2	0	0
Warner Pacific College	0	0	0	1	0	1
Western Baptist College	0	0	0	0	0	2
Western Oregon State College	1	0	5	0	0	0
Willamette University	3	2	2	3	2	1
Pennsylvania						
Albright College	0	0	0	1	0	1
Allegheny College	1	3	3	3	3	8
Allentown College Saint Francis DeSales	0	1	0	0	0	0
Alvernia College	1	1	3	0	2	0
Beaver College	5	4	9	10	9	10
Bloomsburg University of Pennsylvania	2	3	4	8	2	3
Bryn Mawr College	7	8	6	5	7	6
Bucknell University	8	17	9	5	8	12
Cabrini College	0	1	3	2	2	1
California University of Pennsylvania	17	12	7	3	8	4
Carlow College	17	6	8	5	5	5
Carnegie-Mellon University	20	21	36	14	13	11
Cedar Crest College	3	1	1	1	0	0
Chatham College	8	9	7	4	3	3
Chestnut Hill College	2	3	7	5	9	4
Cheyney University of Pennsylvania (H)	100	95	95	71	45	35
Clarion University of Pennsylvania	4	8	8	3	5	5
Delaware Valley College of Sci and Agri	0	0	4	1	1	3
Dickinson College	2	5	6	1	3	1
Drexel University	16	17	31	27	18	24
Duquesne University	8	9	6	7	2	7
E Stroudsburg University of Pennsylvania	7	7	3	8	6	4
Eastern College	3	5	6	5	1	1
Edinboro University of Pennsylvania	3	2	5	6	6	3
Elizabethtown College	4	2	0	1	0	0
Franklin and Marshall College	7	5	3	6	6	6
Gannon University	3	5	6	3	3	2
Geneva College	5	2	3	3	5	9
Gettysburg College	2	3	0	0	0	3

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Grove City College	0	0	1	0	0	0
Gwynedd-Mercy College	1	2	0	0	1	1
Haverford College	3	4	7	4	5	10
Immaculata College	1	2	2	1	0	0
Indiana University of Pennsylvania - All Cam	10	7	16	35	27	20
Juniata College	1	0	0	1	0	1
King's College	0	1	0	0	1	0
Kutztown University of Pennsylvania	3	2	0	1	0	4
La Roche College	0	4	2	0	0	2
La Salle University	21	15	31	10	13	3
Lafayette College	17	4	14	8	15	12
Lebanon Valley College	0	0	1	0	1	1
Lehigh University	7	1	6	7	8	6
Lincoln University (H)	94	88	67	74	59	67
Lock Haven University of Pennsylvania	1	0	2	3	2	3
Lycoming College	1	3	1	1	2	0
Mansfield University of Pennsylvania	6	2	2	1	4	1
Marywood College	0	0	0	1	1	0
Mercyhurst College	1	1	2	1	1	1
Messiah College	1	1	1	0	1	6
Millersville University of Pennsylvania	27	14	2	1	12	5
Moravian College	2	2	1	0	1	2
Muhlenberg College	5	1	0	1	0	0
Neumann College	0	0	0	0	1	0
Pennsylvania State University-All Campuses	35	35	35	36	40	48
Philadelphia College of Pharmacy & Sci	0	0	0	0	2	0
Philadelphia College of Textiles & Sci	0	0	1	0	3	7
Point Park College	7	4	10	8	1	4
Robert Morris College	0	1	4	1	11	5
Rosemont College	5	2	2	4	0	4
Saint Francis College	1	2	0	2	0	0
Saint Joseph's University	16	19	12	7	13	7
Saint Vincent College & Seminary	2	5	1	1	2	1
Seton Hill College	0	4	1	1	3	2
Shippensburg University of Pennsylvania	8	6	2	6	2	4
Slippery Rock University of Pennsylvania	3	6	7	3	4	7
Spring Garden College	3	7	3	11	4	4
Susquehanna University	0	1	0	0	3	0
Swarthmore College	13	20	8	14	20	20
Temple University	90	87	76	59	87	78
Thiel College	1	1	1	0	4	0
Thomas Jefferson University	0	1	0	0	0	0
University of Pennsylvania	60	62	66	45	43	59
University of Pittsburgh	48	107	84	102	122	121
University of Scranton	1	1	2	2	0	6
Ursinus College	0	3	3	0	0	3
Villa Maria College	1	0	0	0	0	0
Villanova University	11	6	5	6	2	6
Washington and Jefferson College	0	3	3	0	2	6
Waynesburg College	3	2	2	1	2	1
West Chester University of Pennsylvania	4	7	5	5	5	9
Westminster College	0	1	2	0	0	1
Widener University Pennsylvania Campus	8	8	2	5	3	4
Wilkes College	1	1	1	1	1	0

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Wilson College	2	3	0	0	1	0
York College of Pennsylvania	1	2	1	6	3	4
Rhode Island						
Brown University	74	58	43	72	57	63
Bryant College of Business Admin	0	0	0	0	1	2
Johnson & Wales College	0	0	2	3	0	3
Providence College	1	0	1	2	0	0
Rhode Island College	9	8	6	9	8	5
Roger Williams College	9	2	2	0	1	0
Salve Regina College-The Newport College	1	0	1	0	1	0
University of Rhode Island	6	3	20	5	9	8
South Carolina						
Allen University (H)	33	29	18	9	9	0
Baptist College at Charleston	22	14	27	3	7	7
Benedict College (H)	54	50	27	55	52	52
Central Wesleyan College	1	2	0	4	1	1
Citadel Military College of S Carolina	6	3	6	11	16	16
Claflin College (H)	64	76	47	6	39	39
Clemson University	7	13	18	26	50	50
Coker College	6	4	3	4	6	6
College of Charleston	12	14	13	15	15	15
Columbia College	4	0	2	11	5	5
Converse College	1	2	3	4	2	2
Erskine College	7	3	4	5	0	0
Francis Marion College	17	17	28	17	15	15
Furman University	4	10	4	7	15	15
Lander College	8	8	15	10	14	14
Limestone College	2	5	11	3	2	2
Morris College (H)	10	29	24	19	30	30
Newberry College	2	7	13	4	6	6
Presbyterian College	2	1	3	5	3	3
South Carolina State College (H)	151	118	184	115	90	90
University of South Carolina-All Campuses	61	89	119	110	129	129
Voorhees College (H)	49	47	40	34	26	26
Winthrop College	29	29	20	20	18	18
Wofford College	15	8	10	11	12	12
South Dakota						
Augustana College	0	1	0	1	0	0
Black Hills State College	1	0	4	1	1	0
Dakota State College	1	0	0	0	0	1
Dakota Wesleyan University	1	0	0	1	0	0
Huron College	1	0	0	2	0	0
Mount Marty College	0	0	0	0	1	0
National College	3	0	0	1	5	5
Sioux Falls College	1	0	0	0	0	0
South Dakota School of Mines & Tech	0	0	1	1	1	1
South Dakota State University	0	1	0	0	0	2
University of South Dakota	0	0	1	1	0	1

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Yankton College	1	1	0	0	0	0
Tennessee						
American Baptist College of ABT Seminary	0	0	9	0	0	0
Austin Peay State University	19	27	16	17	12	11
Belmont College	0	0	1	0	2	2
Bethel College	0	1	0	0	0	0
Bryan College	2	1	0	0	1	1
Carson-Newman College	2	4	2	6	2	4
Christian Brothers College	15	10	10	7	12	4
David Lipscomb College	2	8	3	0	1	1
East Tennessee State University	2	5	10	7	3	0
Fisk University (H)	132	106	81	64	49	37
Freed-Hardeman College	0	0	1	1	1	1
George Peabody College for Teachers	5	2	0	0	0	0
King College	0	0	1	0	4	0
Knoxville College (H)	33	40	23	17	0	0
Lambuth College	4	5	4	1	4	6
Lane College (H)	54	35	32	44	34	30
Le Moyne-Owen College (H)	36	31	34	27	27	0
Lee College	5	0	0	1	5	0
Lincoln Memorial University	4	1	0	0	1	1
Maryville College	1	4	0	2	1	1
Memphis State University	50	61	59	31	27	42
Middle Tennessee State University	25	31	31	18	21	20
Milligan College	0	0	1	0	1	0
Rhodes College	4	10	0	1	1	8
Scarritt Graduate School	1	0	0	0	0	0
Southern College of Seventh-Day Advent	0	1	1	2	3	4
Tennessee State University (H)	157	203	198	143	132	109
Tennessee Technological University	6	2	3	13	10	9
Tennessee Temple University	0	0	1	0	1	0
Tennessee Wesleyan College	0	0	0	0	1	1
Trevecca Nazarene College	1	0	1	0	1	0
Tusculum College	2	1	0	2	1	0
Union University	1	1	3	0	4	1
University of Tennessee-Chattanooga	6	6	11	24	25	22
University of Tennessee-Knoxville	22	38	61	77	56	61
University of Tennessee-Martin	14	15	20	21	11	11
University of Tennessee-Nashville	9	5	0	0	0	0
University of the South	5	1	0	1	3	4
Vanderbilt University	17	17	16	29	19	28
Texas						
Abilene Christian University	2	0	1	1	2	0
American Technological University	0	0	0	0	2	6
Angelo State University	2	5	4	2	4	7
Austin College	2	9	4	2	3	2
Baylor University	9	4	5	13	7	3
Bishop College	54	37	38	16	4	0
Corpus Christi State University	0	1	1	2	2	3
Dallas Baptist University	6	5	7	5	5	9

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Devry Institute of Technology	0	3	3	16	12	19
East Texas Baptist University	0	1	4	1	1	2
East Texas State University	53	43	32	31	22	18
Hardin-Simmons University	0	2	1	1	0	0
Houston Baptist University	0	5	1	8	3	8
Howard Payne University	3	0	1	0	1	0
Huston-Tillotson College (H)	28	15	17	16	10	16
Incarnate Word College	3	2	8	5	5	2
Jarvis Christian College (H)	35	13	32	25	29	28
Lamar University	36	7	11	18	27	26
Laredo State University	1	0	0	0	0	0
Lubbock Christian University	0	1	2	0	3	0
McMurry College	2	2	1	2	3	2
Midwestern State University	4	2	4	0	1	1
North Texas State University	26	28	32	16	22	17
Our Lady of the Lake Univ of San Antonio	6	8	6	1	1	4
Pan American University	1	1	0	1	0	1
Paul Quinn College (H)	12	2	9	3	8	7
Prairie View Agric & Mech Univ (H)	115	136	218	177	160	154
Rice University	15	7	8	24	12	12
Saint Edward's University	2	3	11	6	2	5
Saint Mary's University of San Antonio	16	4	7	6	7	12
Sam Houston State University	19	30	39	24	21	29
Schreiner College	0	0	0	0	0	1
Southern Methodist University	13	12	9	20	20	11
Southwest Texas State University	9	12	6	5	8	13
Southwestern Adventist College	1	1	0	2	1	2
Southwestern University	1	1	0	0	1	1
Stephen F. Austin State University	8	9	8	10	5	7
Sul Ross State University	1	3	1	1	2	0
Tarleton State University	0	1	0	2	0	2
Texas A & I University	8	7	0	5	4	4
Texas A & M University-All Campuses	5	5	20	24	32	38
Texas Christian University	6	1	2	1	6	5
Texas College (H)	5	25	21	8	15	4
Texas Lutheran College	1	3	2	2	1	3
Texas Southern University (H)	114	109	94	47	70	0
Texas Tech University	6	5	5	10	7	9
Texas Wesleyan College	6	8	6	1	1	7
Texas Woman's University	8	12	11	6	9	18
Trinity University	6	5	4	2	2	3
University of Dallas	0	1	3	2	2	0
University of Houston	81	65	67	39	30	40
University of Houston-Clear Lake	2	1	4	1	11	2
University of Houston-Downtown	0	0	0	0	11	19
University of Mary Hardin-Baylor	4	6	2	2	3	3
University of St Thomas	3	2	5	2	10	2
University of Texas-Arlington	26	25	29	26	27	31
University of Texas-Austin	27	38	52	52	68	80
University of Texas-Dallas	3	4	5	9	10	10
University of Texas-El Paso	4	11	7	8	8	1
University of Texas-Permian Basin	3	6	2	2	3	3
University of Texas-San Antonio	5	4	9	13	12	14
University of Texas-Tyler	5	8	9	6	5	3

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Wayland Baptist University	1	1	5	1	0	6
West Texas State University	5	4	1	3	3	1
Wiley College (H)	27	27	12	9	8	12
Utah						
Brigham Young University-All Campuses	0	0	0	4	16	9
Southern Utah State College	1	0	0	1	1	0
University of Utah	7	12	4	2	13	8
Utah State University	1	4	1	2	4	0
Weber State College	4	5	9	1	3	1
Westminster College of Salt Lake City	3	3	3	0	1	2
Vermont						
Bennington College	1	0	1	1	0	0
Castleton State College	1	0	0	1	1	0
Goddard College	6	5	5	0	0	0
Johnson State College	1	0	0	0	0	0
Lyndon State College	1	0	0	1	0	0
Middlebury College	7	3	2	3	1	4
Norwich University-Military Coll of VT	0	0	4	1	1	3
Saint Michael's College	0	0	0	0	1	0
University of Vermont	2	4	4	1	2	2
Virginia						
Averett College	3	3	0	0	1	3
Bluefield College	0	0	1	0	0	0
Bridgewater College	0	0	0	2	0	3
College of William and Mary	20	18	30	30	29	46
Eastern Mennonite College	0	1	0	0	0	0
Emory and Henry College	0	3	1	1	1	1
Ferrum College	0	1	4	3	2	3
George Mason University	4	6	8	6	15	27
Hampden-Sydney College	2	1	2	1	2	2
Hampton University (H)	118	106	107	133	148	182
Hollins College	2	1	3	1	3	1
James Madison University	5	7	5	15	34	54
Liberty University	0	0	0	1	1	4
Longwood College	0	4	2	7	10	10
Lynchburg College	3	9	1	3	2	1
Mary Baldwin College	3	4	6	3	4	8
Mary Washington College	2	6	4	2	4	7
Marymount University	0	0	1	0	1	1
Norfolk State University (H)	128	137	118	93	76	108
Old Dominion University	21	25	20	41	40	42
Radford University	3	7	5	4	0	11
Randolph-Macon College	2	2	2	2	6	3
Randolph-Macon Woman's College	2	2	0	0	2	3
Roanoke College	1	2	0	2	1	1
Saint Paul's College (H)	14	24	28	26	24	21
Shenandoah College and Conserv of Music	0	0	0	1	0	0
Sweet Briar College	2	1	1	3	7	7

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
University of Richmond	5	1	6	3	6	7
University of Virginia	43	38	62	145	132	95
Virginia Commonwealth University	40	53	52	59	75	49
Virginia Intermont College	0	4	2	0	0	0
Virginia Military Institute	1	11	6	11	15	16
Virginia Polytechnic Inst & State Univ	12	17	21	42	42	55
Virginia State University (H)	160	142	133	75	50	58
Virginia Union University (H)	53	58	53	50	38	22
Virginia Wesleyan College	8	3	9	6	2	2
Washington and Lee University	4	2	1	3	3	2
Washington						
Central Washington University	4	2	5	3	2	1
Eastern Washington University	15	16	15	7	0	4
Gonzaga University	1	0	0	1	1	1
Heritage College	4	1	0	0	0	0
Pacific Lutheran University	4	9	4	6	3	1
Saint Martin's College	7	9	2	3	2	3
Seattle Pacific University	2	1	1	2	2	2
Seattle University	4	6	4	7	1	0
University of Puget Sound	7	7	7	3	3	0
University of Washington	52	52	42	39	50	54
Walla Walla College	2	1	0	2	0	2
Washington State University	5	5	10	11	13	14
Western Washington University	4	7	13	7	6	5
Whitman College	4	3	0	2	1	2
Whitworth College	2	1	0	3	0	1
West Virginia						
Alderson Broaddus College	0	3	1	0	0	0
Bethany College	3	0	0	1	0	0
Bluefield State College	5	2	2	1	1	2
Concord College	1	2	0	0	1	0
Davis & Elkins College	2	0	1	0	1	1
Fairmont State College	2	3	2	1	0	1
Glenville State College	0	2	0	0	0	0
Marshall University	4	5	4	4	3	4
Salem College - All Campuses	1	4	1	2	0	0
Shepherd College	0	0	0	0	0	1
University of Charleston	1	0	1	0	1	2
West Liberty State College	1	1	1	0	0	0
West Virginia Institute of Technology	6	2	10	10	7	8
West Virginia State College (H)	6	21	10	6	5	4
West Virginia University	8	6	11	13	17	16
West Virginia Wesleyan College	1	1	3	3	1	3
Wheeling Jesuit College	2	2	1	0	1	0
Wisconsin						
Alverno College	0	0	1	1	0	3
Beloit College	8	2	5	3	3	5
Cardinal Stritch College	2	1	8	2	2	2

Bachelor's degrees awarded to blacks in science and engineering, by institution: 1977-89, selected years

Academic Institution	1977	1979	1981	1985	1987	1989
Carroll College	5	2	2	3	2	1
Carthage College	2	5	3	2	3	0
Edgewood College	0	1	2	0	1	0
Lakeland College	2	0	1	0	3	0
Lawrence University	3	3	0	5	0	1
Marquette University	19	15	19	14	18	8
Milton College	1	0	0	0	0	0
Milwaukee School of Engineering	4	4	11	0	11	3
Mount Mary College	3	1	0	0	0	0
Mount Senario College	1	0	0	0	0	0
Northland College	4	3	0	1	0	0
Ripon College	0	2	2	2	1	1
Saint Norbert College	0	1	1	0	0	0
University of Wisconsin-Eau Claire	4	0	1	0	1	1
University of Wisconsin-Green Bay	0	0	0	2	0	0
University of Wisconsin-La Crosse	1	3	1	0	1	1
University of Wisconsin-Madison	24	34	23	34	28	28
University of Wisconsin-Milwaukee	19	16	16	12	14	14
University of Wisconsin-Oshkosh	3	6	2	2	4	4
University of Wisconsin-Parkside	11	2	1	2	3	3
University of Wisconsin-Platteville	3	3	1	0	1	1
University of Wisconsin-River Falls	4	4	3	0	2	2
University of Wisconsin-Stevens Point	3	2	0	2	2	2
University of Wisconsin-Stout	1	2	0	1	0	0
University of Wisconsin-Superior	3	3	1	1	0	0
University of Wisconsin-Whitewater	2	3	1	1	2	2
Viterbo College	0	0	0	0	1	0
Wyoming						
University of Wyoming	2	2	5	0	0	4
Virgin Islands						
University of the Virgin Islands (H)	15	6	17	15	19	14

NOTES: Data for 1983 were not completely processed by the National Center for Education Statistics (NCES).

Science and engineering fields are defined as the natural sciences (physical science, mathematical science, computer science, biological science, and agricultural science), the social sciences (psychology and social science), and engineering (engineering technologies are included in 1977 through 1981).

Zero means either that no degrees were awarded to blacks or that an institution failed to report any racial/ethnic data.

An institution name followed by an "(H)" indicates an historically black college or university.

SOURCE: National Science Foundation/SRS tabulations of data from the U.S. Department of Education/ NCES Earned Degrees and Completion Surveys

STIS

The Science & Technology Information System at the National Science Foundation

What is STIS?

STIS is an electronic dissemination system that provides fast, easy access to National Science Foundation (NSF) publications. There is no cost to you except for possible long-distance phone charges. The service is available 24 hours a day, except for maintenance periods.

What Publications are Available?

Publications currently available include:

- The *NSF Bulletin*
- Program announcements and "Dear Colleague" letters
- General publications and reports
- *NSF Directions*
- Press releases
- NSF organization charts and phone books
- NSF vacancy announcements
- Award abstracts (1989—now)

The goal is for all printed publications to be available electronically.

Access Methods

There are four ways to access STIS. Choose the method that meets your needs and the communication facilities you have available.

Electronic Documents Via E-Mail. If you can send E-mail to Internet or BITNET addresses you can send a specially formatted message, and the document you request will be automatically returned to you via E-mail.

Anonymous FTP. Internet users who are familiar with this file transfer method can quickly and easily transfer STIS documents to their local system for browsing and printing.

On-Line STIS. If you have a VT100 emulator and an Internet connection or a modem, you can log on to the on-line system. The on-line system features full-text search and retrieval software to help you locate the documents and award abstracts that are of interest to you. Once you locate a document, you can browse through it on-line or download it using the Kermit protocol or request that it be mailed to you.

Direct E-Mail. You can request that STIS E-mail you an electronic copy of every document that is added to the system. This is particularly effective for periodic and time-sensitive publications such as the *Bulletin*.

Getting Started With Documents Via E-Mail

Send a message to **stisserv@nsf.gov** (Internet) or **stisserv@NSF** (BITNET). The *text* of the message should be as follows (the Subject line is ignored):

Request: stis
Topic: index

You will receive a list of all the documents on STIS and instructions for retrieving them. Please note that all requests for electronic documents should be sent to **stisserv**, as shown above. Requests for *printed* publications should be sent to *pubs@nsf.gov* (Internet) or *pubs@NSF* (BITNET), and include the document name, number, and your postal address.

Getting Started with Anonymous FTP

FTP to *stis.nsf.gov*. If you cannot connect, try *128.150.195.40*. Enter *anonymous* for the username, and your E-mail address for the password.

Retrieve the file *ftpindex*. This contains a list of the files available on STIS and additional instructions.

Getting Started with the On-Line System

If you are on the Internet: *telnet stis.nsf.gov*. If you cannot connect, try *telnet 128.150.195.40*. At the login prompt, enter *public*.

If you are dialing in with a modem: Choose 1200, 2400, or 9600 baud, 7-E-1. Dial 202-357-0359 or 202-357-0360. When connected, press Enter. At the login prompt, enter *public*.

Getting Started with Direct E-Mail

Send an E-mail message to **stisserv@nsf.gov** (Internet) or **stisserv@NSF** (BITNET). The Subject field will be ignored. Put the following in the message text:

Request: stis
Topic: stisdirm

You will receive instructions for this service.

For More Information

For additional assistance contact:

E-mail: *stis-request@nsf.gov* (Internet)
stis-req@NSF (BITNET)
Phone: 202-357-7555 (voice mail)
FAX: 202-357-7663
TDD: 202-357-7492

NSF 91-10 Revised 10/4/91